



U.S. ARMY CORPS  
OF ENGINEERS  
LOS ANGELES DISTRICT

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# **MURRIETA CREEK PHASE 1 -**

## **SANTA MARGARITA RIVER WATERSHED**

### **RIVERSIDE COUNTY, CALIFORNIA**

#### **Construction Solicitation and Specifications**

**HUBZone Set-Aside**

**JULY 2003**

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<b>SOLICITATION, OFFER, AND AWARD</b> <i>(Construction, Alteration, or Repair)</i>		1. SOLICITATION NO. DACW09-03-B-0006	2. TYPE OF SOLICITATION <input checked="" type="checkbox"/> SEALED BID <i>(IFB)</i> <input type="checkbox"/> NEGOTIATED <i>(RFP)</i>	3. DATE ISSUED 15 July 2003	PAGE OF <b>PAGES</b> 1      2
<b>IMPORTANT - The "offer" section on the reverse must be fully completed by offeror.</b>					
4. CONTRACT NO.		5. REQUISITION/PURCHASE REQUEST NO.		6. PROJECT NO.	
7. ISSUED BY Los Angeles District, COE CESPL-CT-West Region Branch P.O. Box 532711 Los Angeles, CA 90053-2325		CODE		8. ADDRESS OFFER TO Los Angeles District, COE CESPL-CT-West Region Branch P.O. Box 532711 Los Angeles, CA 90053-2325	
9. FOR INFORMATION CALL:		A. NAME Mary Ann Powers		B. TELEPHONE NO. <i>(Include area code) (NO COLLECT CALLS)</i> (213) 452-3254	

### SOLICITATION

**NOTE:** In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".

10. THE GOVERNMENT REQUIRES PERFORMANCE OF THE WORK DESCRIBED IN THESE DOCUMENTS *(Title, identifying no., date):*  
**MURRIETA CREEK REACH 1, RIVERSIDE COUNTY, CALIFORNIA**

This project consists of the construction of the Flood Control Channel with Environmental Restoration. Work includes earthwork, channel and levee construction, and environment restoration consisting of landscaping with new vegetation.

The estimated cost of this acquisition is between \$1,000,000.00 - \$5,000,000.00

Please be advised that this procurement may be delayed, cancelled or revised at any time during the solicitation, and/or final award process.

Any contract awarded as a result of this solicitation is made pursuant to the Small Business Competitiveness Demonstration Program.

11. The Contractor shall begin performance within <u>10</u> calendar days and complete it within <u>365</u> calendar days after receiving <input type="checkbox"/> award, <input checked="" type="checkbox"/> notice to proceed. This performance period is <input checked="" type="checkbox"/> mandatory, <input type="checkbox"/> negotiable. <i>(See _____.)</i>	
12A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT BONDS? <i>(If "YES," indicate within how many calendar days after award in Item 12B.)</i> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	12B. CALENDAR DAYS 10
13. ADDITIONAL SOLICITATION REQUIREMENTS:	
A. Sealed offers in original and <u>0</u> copies to perform the work required are due at the place specified in Item 8 by <u>1:00 p.m.</u> <i>(hour)</i> local time <u>14 August 2003</u> <i>(date)</i> . If this is a sealed bid solicitation, offers will be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.	
B. An offer guarantee <input checked="" type="checkbox"/> is, <input type="checkbox"/> is not required.	
C. All offers are subject to the (1) work requirements, and (2) other provisions and clauses incorporated in the solicitation in full text or by reference.	
D. Offers providing less than <u>60</u> calendar days for Government acceptance after the date offers are due will not be considered and will be rejected.	

## OFFER (Must be fully completed by offeror)

14. NAME AND ADDRESS OF OFFEROR (Include ZIP Code)

15. TELEPHONE NO. (Include area code)

16. REMITTANCE ADDRESS (Include only if different than Item 14)

CODE

FACILITY CODE

17. The offeror agrees to perform the work required at the prices specified below in strict accordance with the terms of this solicitation, if this offer is accepted by the Government in writing within \_\_\_\_\_ calendar days after the date offers are due. (Insert any number equal to or greater than the minimum requirement stated in Item 13D. Failure to insert any number means the offeror accepts the minimum in Item 13D.

AMOUNTS

SEE PRICE SCHEDULE

18. The offeror agrees to furnish any required performance and payment bonds.

## 19. ACKNOWLEDGMENT OF AMENDMENTS

(The offeror acknowledges receipt of amendments to the solicitation - give number and date of each)

AMENDMENT NO.

DATE

20A. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER  
(Type or print)

20B. SIGNATURE

20C. OFFER DATE

## AWARD (To be completed by Government)

21. ITEMS ACCEPTED:

22. AMOUNT

23. ACCOUNTING AND APPROPRIATION DATA

24. SUBMIT INVOICES TO ADDRESS SHOWN IN  
(4 Copies unless otherwise specified)

ITEM

25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO

☐ 10 U.S.C 2304(c) ( ) ☐ 41 U.S.C 253(c) ( )

26. ADMINISTERED BY

CODE

27. PAYMENT WILL BE MADE BY

## CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE

☐ 28. NEGOTIATED AGREEMENT Contractor is required to sign this document and return \_\_\_\_\_ copies to issuing office.) Contractor agrees to furnish and deliver all items or perform all work requirements identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications incorporated by reference in or attached to this contract.

☐ 29. AWARD (Contractor is not required to sign this document.) Your offer on this solicitation is hereby accepted as to the items listed. This award commutes the contract, which consists of (a) the Government solicitation and your offer, and (b) this contract award. No further contractual document is necessary.

30A. NAME AND TITLE OF CONTRACTOR OR PERSON AUTHORIZED TO SIGN (Type or print)

31A. NAME OF CONTRACTING OFFICER (Type or print)

30B. SIGNATURE

30C. DATE

31B. UNITED STATES OF AMERICA

BY

31C. AWARD DATE

## SECTION 00010

## BID SCHEDULE

## PART 1 GENERAL

## 1.1 Bid Items

Item	Description	Quantity	Unit		
			Unit	Price	Amount
0001	DIVERSION AND CONTROL OF WATER	1	Job	LS	_____.
0002	CLEAR SITE AND REMOVE OBSTRUCTIONS	1	Job	LS	_____.
0003	EXCAVATION, CHANNEL, STA. 32+50 TO STA. 39+00	25,000	CY	_____.	_____.
0004	EXCAVATION, CHANNEL, STA. 39+00 TO STA. 60+00	294,795	CY	_____.	_____.
0005	COMPACTED FILL	16,162	CY	_____.	_____.
0006	MISCELLANEOUS FILL	469	CY	_____.	_____.
0007	GEOTEXTILE	2,333	SY	_____.	_____.
0008	GROUTED STONE INVERT STABILIZER	172	CY	_____.	_____.
0009	GROUTED STONE ACCESS RAMPS	225	CY	_____.	_____.
0010	RIPRAP	124,000	t	_____.	_____.
0011	EAST DITCH	1	Job	LS	_____.
0012	WEST DITCH	1	Job	LS	_____.
0013	DECOMPOSED GRANITE SURFACING	384	t	_____.	_____.
0014	AGGREGATE BASE COURSE	240	t	_____.	_____.
0015	ASPHALT CONCRETE PAVEMENT	120	t	_____.	_____.

Item	Description	Quantity	Unit	Price	Amount
0016	LANDSCAPING	1	Job	LS _____.	_____.
0017	MITIGATION PLANTINGS	1	Job	LS _____.	_____.
0018	HYDROSEEDING	1	Job	LS _____.	_____.
0019	BROADCAST SEEDING	1	Job	LS _____.	_____.
0020	IRRIGATION	1	Job	LS _____.	_____.
0021	PIPE ACCESS GATE	1	Job	LS _____.	_____.

**TOTAL ESTIMATED AMOUNT****\$\_\_\_\_\_.**

## Abbreviations:

LF = Linear Foot  
CY = Cubic Yard  
t = Ton (2000 pounds)  
ea = each  
LS = lump sum  
SY = Square Yard



**Section 00010 - Solicitation Contract Form****CLAUSES INCORPORATED BY FULL TEXT**

1. All extensions of the unit prices shown will be subject to verification by the Government. In case of variation between the unit price and the extension, the unit price will be considered to be the bid.
2. If a modification to a bid based on unit prices is submitted which provides for a lump sum adjustment to the total estimated amount, the application of the lump sum adjustment to each unit price in the Price Schedule must be stated. If it is not stated, the bidder agrees that the lump sum adjustment shall be applied on a pro rata basis to every unit price in the Price Schedule.
3. Prices must be submitted on all individual items of the Price Schedule, otherwise the bid will be considered non-responsive and will be rejected.
4. For the purpose of initial evaluation of bids, the following will be utilized in resolving arithmetic discrepancies found on the face of the Price Schedule as submitted by the bidder:
  - a. Obviously misplaced decimal points will be corrected;
  - b. In case of discrepancy between the unit price and the extended price, the unit price will govern;
  - c. Apparent errors in extensions of unit prices will be corrected;
  - d. Apparent errors in addition of lump sum and extended prices will be corrected.
5. For the purpose of bid evaluation, the Government will proceed on the assumption that the bidder intends the bid to be evaluated on the basis of unit prices the totals arrived at by the resolution of arithmetic discrepancies as provided above and the bid will be so reflected on the abstract of bids.
6. The lump sum "LS" line items in the Price Schedule are not "Estimated Quantity" line items and are not subject to the "Variation in Estimated Quantity" contract clause.
7. The Contract Clause 52.232-27, "Prompt Payment for Construction Contracts" requires that the name and address of the contractor official, to whom payment is to be sent, be the same as that in the contract or in a proper Notice of Assignment.
8. Principal Contracting Officer. The Contracting Officer who signs this contract will be the Principal Contracting Officer for this contract. However, any Contracting Officer assigned to the Los Angeles District, contracting within his authority, may take formal action on this contract when the Principal Contracting Officer is unavailable and the action needs to be taken.
9. Amounts and prices shall be indicated in either words or figures, NOT BOTH.
10. Payment of Electronic Funds Transfer (EFT) is the mandatory method of payment. The Contractors attention is directed to Contract Clause NO. 52.232-33 "Mandatory Information for Electronic Funds Transfer" located in Section 00800.
11. The bidder shall distribute his indirect costs (overhead, profit, bond, etc.,) over all items in the Price Schedule. The Government will review all submitted Price Schedules for any unbalancing of the items. Any submitted Price Schedule determined to be unbalanced may be considered nonresponsive and cause the bidder to be ineligible for contract award.
12. The bidder shall furnish all plant, labor, material, equipment, etc., necessary to perform all work in strict accordance with the terms and conditions set forth in the contract in include all attachments thereto.
13. Some quantities are ESTIMATED, the bidders prices MUST BE FIRM.

14. Bidder is cautioned to check his Price Schedule carefully prior to submission. If the Price Schedule contains unit prices, they should be round off to the second decimal point only NOT EXTENDED FURTHER.

15. Bidders attention is directed to Section 00100 "Instructions to Bidders" Clause No. 52.0214-400, entitled "Directions for Submitting Bids". Please note that there are Special Instructions Pertaining to Hand-Carried Bids.

16. Contractor is required to fill in Cage code (Reference Section 00600, entitled "Required Central Contractor Registration" Mar 1998) and DUNS Number (Reference Section 00600, entitled, "Data Universal Numbering System (DUNS) Number" Jun1999) in Block No. 15 on Standard Form 1442, Name and Address Block (Cage Code under Code and DUNS No. under Facility Code respectively).

17. The Government contemplates award on one contract to the responsive, responsible bidder who submits the low bid for the total of all the items in the Price Schedule.

## CERTIFICATE OF CORPORATE PRINCIPAL

1) IF THE OFFEROR IS A JOINT VENTURE, COMPLETE THE FOLLOWING:

_____	_____	_____
(Company Name)	(Signature)	(Title)

_____	_____	_____
(Company Name)	(Signature)	(Title)

_____	_____	_____
(Company Name)	(Signature)	(Title)

2) IF THE OFFEROR IS PARTNERSHIP, LIST FULL NAME OF ALL PARTNERS:

_____	_____	_____
(Company Name)	(Signature)	(Title)

_____	_____	_____
(Company Name)	(Signature)	(Title)

_____	_____	_____
(Company Name)	(Signature)	(Title)

3) IF THE OFFEROR IS A CORPORATION, THE FOLLOWING CERTIFICATION SHOULD BE COMPLETED:

## CERTIFICATION AS TO CORPORATE PRINCIPAL

I, \_\_\_\_\_, certify that I am the Secretary of the corporation named as principal in the within contract; that \_\_\_\_\_, who signed the said contract on behalf of the principal, was the \_\_\_\_\_ of the corporation; that I know his signature and that his signature is genuine; and that said contract was duly signed, sealed and attested for in behalf of said corporation by authority of its governing body.

\_\_\_\_\_  
CORPORATE PRINCIPAL

CORPORATE SEAL

\_\_\_\_\_  
SECRETARY

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## 52.0000-4010 INQUIRIES

Perspective bidders/offerors should submit inquiries related to this solicitation by writing or calling the following (collect calls will not be accepted:

(1) For inquiries of a contractual nature (solicitation requirements, interpretation of contractual language) call:

Mary Ann Powers

213/452/3254

For bid results only, call (213) 452-3235.

(2) All technical questions on the specification or drawings will be submitted in writing to: Mary Ann Powers

Address:

USAED-Los Angeles, P.O. Box 532711, Los Angeles, CA 90053-2325  
Facsimile Number 213/452-4187

(3) Please include the solicitation number, project title and location of project with your questions. Written inquiries must be received by this office not later than 14 calendar days prior to bid opening date/date set for receipt of offers.

(4) Oral explanations or instructions are not binding. Any information given to a bidder/offeror which impacts the bid/offer will be given in the form of a written amendment to the solicitation.

## 52.0000-4023 SAFETY REQUIREMENTS

The bidder's attention is directed to the latest version of U.S Army Corps of Engineers Safety and Health Manual, EM 385-1-1, which will be strictly enforced. This publication may be obtained from the US Army Engineer District, Los Angeles, ATTN: Safety Office, P.O. Box 532711, Los Angeles, California 90053-2325.

## 52.0001-4004 BID RESULTS

The telephone number for bid results after the opening is Area Code (213) 452-3235.

## 52.211-1 AVAILABILITY OF SPECIFICATIONS LISTED IN THE GSA INDEX OF FEDERAL SPECIFICATIONS, STANDARDS AND COMMERCIAL ITEM DESCRIPTIONS, FPMR PART 101-29 (AUG 1998)

(a) The GSA Index of Federal Specifications, Standards and Commercial Item Descriptions, FPMR Part 101-29, and copies of specifications, standards, and commercial item descriptions cited in this solicitation may be obtained for a fee by submitting a request to--GSA Federal Supply Service, Specifications Section, Suite 8100, 470 East L'Enfant Plaza, SW, Washington, DC 20407, Telephone (202) 619-8925, Facsimile (202) 619-8978.

(b) If the General Services Administration, Department of Agriculture, or Department of Veterans Affairs issued this solicitation, a single copy of specifications, standards, and commercial item descriptions cited in this solicitation may be obtained free of charge by submitting a request to the addressee in paragraph (a) of this provision. Additional copies will be issued for a fee.

52.211-2 AVAILABILITY OF SPECIFICATIONS LISTED IN THE DOD INDEX OF SPECIFICATIONS AND STANDARDS (DODISS) AND DESCRIPTIONS LISTED IN THE ACQUISITION MANAGEMENT SYSTEMS AND DATA REQUIREMENTS CONTROL LIST, DOD 5010.12-L (DEC 1999)

Copies of specifications, standards, and data item descriptions cited in this solicitation may be obtained--

(a) From the ASSIST database via the Internet at <http://assist.daps.mil>; or

(b) By submitting a request to the--Department of Defense Single Stock Point (DoDSSP), Building 4, Section D, 700 Robbins Avenue, Philadelphia, PA 19111-5094, Telephone (215) 697-2667/2179, Facsimile (215) 697-1462.

(End of provision)

52.211-14 NOTICE OF PRIORITY RATING FOR NATIONAL DEFENSE USE (SEP 1990)

Any contract awarded as a result of this solicitation will be ☐ DX rated order; ☒ DO rated order certified for national defense use under the Defense Priorities and Allocations System (DPAS) (15 CFR 700), and the Contractor will be required to follow all of the requirements of this regulation. [Contracting Officer check appropriate box.]

(End of provision)

52.214-3 AMENDMENTS TO INVITATIONS FOR BIDS (DEC 1989)

(a) If this solicitation is amended, then all terms and conditions which are not modified remain unchanged.

(b) Bidders shall acknowledge receipt of any amendment to this solicitation (1) by signing and returning the amendment, (2) by identifying the amendment number and date in the space provided for this purpose on the form for submitting a bid, (3) by letter or telegram, or (4) by facsimile, if facsimile bids are authorized in the solicitation. The Government must receive the acknowledgment by the time and at the place specified for receipt of bids.

(End of provision)

52.214-4 FALSE STATEMENTS IN BIDS (APR 1984)

Bidders must provide full, accurate, and complete information as required by this solicitation and its attachments. The penalty for making false statements in bids is prescribed in 18 U.S.C. 1001.

(End of provision)

52.214-5 SUBMISSION OF BIDS (MAR 1997)

(a) Bids and bid modifications shall be submitted in sealed envelopes or packages (unless submitted by electronic means) (1) addressed to the office specified in the solicitation, and (2) showing the time and date specified for receipt, the solicitation number, and the name and address of the bidder.

(b) Bidders using commercial carrier services shall ensure that the bid is addressed and marked on the outermost envelope or wrapper as prescribed in subparagraphs (a)(1) and (2) of this provision when delivered to the office specified in the solicitation.

(c) Telegraphic bids will not be considered unless authorized by the solicitation; however, bids may be modified or withdrawn by written or telegraphic notice.

(d) Facsimile bids, modifications, or withdrawals, will not be considered unless authorized by the solicitation.

(e) Bids submitted by electronic commerce shall be considered only if the electronic commerce method was specifically stipulated or permitted by the solicitation.

(End of provision)

#### 52.214-7 LATE SUBMISSIONS, MODIFICATIONS, AND WITHDRAWALS OF BIDS (NOV 1999)

(a) Bidders are responsible for submitting bids, and any modifications or withdrawals, so as to reach the Government office designated in the invitation for bids (IFB) by the time specified in the IFB. If no time is specified in the IFB, the time for receipt is 4:30 p.m., local time, for the designated Government office on the date that bids are due.

(b)(1) Any bid, modification, or withdrawal received at the Government office designated in the IFB after the exact time specified for receipt of bids is "late" and will not be considered unless it is received before award is made, the Contracting Officer determines that accepting the late bid would not unduly delay the acquisition; and--

(i) If it was transmitted through an electronic commerce method authorized by the IFB, it was received at the initial point of entry to the Government infrastructure not later than 5:00 p.m. one working day prior to the date specified for receipt of bids; or

(ii) There is acceptable evidence to establish that it was received at the Government installation designated for receipt of bids and was under the Government's control prior to the time set for receipt of bids.

(2) However, a late modification of an otherwise successful bid that makes its terms more favorable to the Government, will be considered at any time it is received and may be accepted.

(c) Acceptable evidence to establish the time of receipt at the Government installation includes the time/date stamp of that installation on the bid wrapper, other documentary evidence of receipt maintained by the installation, or oral testimony or statements of Government personnel.

(d) If an emergency or unanticipated event interrupts normal Government processes so that bids cannot be received at the Government office designated for receipt of bids by the exact time specified in the IFB and urgent Government requirements preclude amendment of the IFB, the time specified for receipt of bids will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal Government processes resume.

(e) Bids may be withdrawn by written notice received at any time before the exact time set for receipt of bids. If the IFB authorizes facsimile bids, bids may be withdrawn via facsimile received at any time before the exact time set for receipt of bids, subject to the conditions specified in the provision at 52.214-31, Facsimile Bids. A bid may be withdrawn in person by a bidder or its authorized representative if, before the exact time set for receipt of bids, the identity of the person requesting withdrawal is established and the person signs a receipt for the bid.

(End of provision)

#### 52.214-18 PREPARATION OF BIDS--CONSTRUCTION (APR 1984)

(a) Bids must be (1) submitted on the forms furnished by the Government or on copies of those forms, and (2) manually signed. The person signing a bid must initial each erasure or change appearing on any bid form.

(b) The bid form may require bidders to submit bid prices for one or more items on various bases,



including--

- (1) Lump sum bidding;
- (2) Alternate prices;
- (3) Units of construction; or
- (4) Any combination of subparagraphs (1) through (3) above.

(c) If the solicitation requires bidding on all items, failure to do so will disqualify the bid. If bidding on all items is not required, bidders should insert the words "no bid" in the space provided for any item on which no price is submitted.

(d) Alternate bids will not be considered unless this solicitation authorizes their submission.

(End of provision)

#### 52.214-19 CONTRACT AWARD--SEALED BIDDING--CONSTRUCTION (AUG 1996)

(a) The Government will evaluate bids in response to this solicitation without discussions and will award a contract to the responsible bidder whose bid, conforming to the solicitation, will be most advantageous to the Government, considering only price and the price-related factors specified elsewhere in the solicitation.

(b) The Government may reject any or all bids, and waive informalities or minor irregularities in bids received.

(c) The Government may accept any item or combination of items, unless doing so is precluded by a restrictive limitation in the solicitation or the bid.

(d) The Government may reject a bid as nonresponsive if the prices bid are materially unbalanced between line items or subline items. A bid is materially unbalanced when it is based on prices significantly less than cost for some work and prices which are significantly overstated in relation to cost for other work, and if there is a reasonable doubt that the bid will result in the lowest overall cost to the Government even though it may be the low evaluated bid, or if it is so unbalanced as to be tantamount to allowing an advance payment.

(End of provision)

#### 52.214-34 SUBMISSION OF OFFERS IN THE ENGLISH LANGUAGE (APR 1991)

Offers submitted in response to this solicitation shall be in the English language. Offers received in other than English shall be rejected.

(End of provision)

#### 52.214-35 SUBMISSION OF OFFERS IN U.S. CURRENCY (APR 1991)

Offers submitted in response to this solicitation shall be in terms of U.S. dollars. Offers received in other than U.S. dollars shall be rejected.

(End of provision)

#### ARITHMETIC DISCREPANCIES EFARS 52.214-5000

(a) For the purpose of initial evaluation of bids, the following will be utilized in resolving arithmetic discrepancies found on the face

of the bidding schedule as submitted by bidders:

- (1) Obviously misplaced decimal points will be corrected;
- (2) Discrepancy between unit price and extended price, the unit price will govern;
- (3) Apparent errors in extension of unit prices will be corrected;
- (4) Apparent errors in addition of lump sum and extended prices will be corrected.

(b) For the purpose of bid evaluation, the Government will proceed on the assumption that the bidder intends his bid to be evaluated on the basis of the unit prices, the totals arrived at by resolution of arithmetic discrepancies as provided above and the bid will be so reflected on the abstract of bids.

(c) These correction procedures shall not be used to resolve any ambiguity concerning which bid is low.

(End of statement)

#### 52.0214-4583 TELEGRAPHIC BIDS/OFFERS ARE NOT ACCEPTABLE

Any telegram to modify or withdraw a bid/offer sent to this office must be physically delivered to the office designated for receipt of bid/offer by the date and time set for bid opening/receipt of proposals. No one from this office will be dispatched to the local telegraph office to pick up any telegram for any reason.

#### 52.0214-4584 FACSIMILE BIDS/OFFERS

Facsimile bids/offers, modifications thereto, or cancellations of bids/offers will not be accepted.

#### 52.0214-4599 EVALUATION FOR AWARD

The Government contemplates award of one contract to the responsive, responsible bidder who submits the low bid for the total of all the items in the Bidding Schedule.

#### 52.214-5000 APPARENT CLERICAL MISTAKES (MAR 1995)--EFARS

(a) For the purpose of initial evaluations of bids, the following will be utilized in the resolving arithmetic discrepancies found on the face of bidding schedule as submitted by the bidder:

- (1) Obviously misplaced decimal points will be corrected;
- (2) Discrepancy between unit price and extended price, the unit price will govern;
- (3) Apparent errors in extension of unit prices will be corrected;
- (4) Apparent errors in addition of lump-sum and extended prices will be corrected.

(b) For the purpose of bid evaluation, the government will proceed on the assumption that the bidder intends his bid to be evaluated on basis of the unit prices, the totals arrived at by resolution of arithmetic discrepancies as provided above and the bid will be so reflected on the abstract of bids.

(c) These correction procedures shall not be used to resolve any ambiguity concerning which bid is low.

(End of statement)

#### 52.0214-5001 DIRECTIONS FOR SUBMITTING BIDS (APR 2002)

Envelopes containing bids must be sealed, marked and addressed as follows:

MARK ENVELOPES:

Bid under IFB No. DACW09-03-B-0006  
Bid Opening Date: August 5, 2003 at 1:00 P.M.

ADDRESS ENVELOPES TO:

Department of the Army  
U. S. Army Engineer District, Los Angeles  
ATTN: Contracting Division  
C/O: Mary Ann Powers  
P. O. Box 532711  
Los Angeles, CA 90053-2325

SPECIAL INSTRUCTIONS PERTAINING TO HAND-CARRIED BIDS:

Due to security precautions, all Corps of Engineers visitors/couriers are now required to check in at the Public Affairs Office (PAO), Suite 980, Wilshire Blvd, Los Angeles, CA. Bidders are no longer permitted to hand-carry their bids directly to Contracting Division without an authorized escort. **Bids may NOT be left unattended at the Public Affairs Office (PAO), Suite 980.**

Bidders who desire to hand-deliver their bids prior to the scheduled bid opening time/date must notify the Contracting Division to arrange for receipt of their bid by Contracting Division personnel. Normally the contact will be the Contract Specialist designated above. In the event the Contract Specialist cannot be reached, please call the main Contracting Division telephone number, 213-452-3231 or the following alternative telephone numbers -3233, -3245, -3234, or -3235, in order to request assistance.

**30 minutes prior to the scheduled bid opening time/date**, the Bid Opening Officer will be in the Public Affairs Office (PAO) Suite 980, to accept bids. After visitor in-processing, all bidders will subsequently be escorted to Bid Opening Room, where the bids will be publicly opened and read.

**In order to expedite visitor processing, bidders are encouraged to complete the information requested on the Notice of Visitor(s) Form (attached). The completed form can be faxed to the Contract Specialist at (213)452-4184 or 4187, prior to the date for receipt of bids. In addition, no more than 2 visitors per firm will be permitted within the building. No exceptions will be made. The offeror is responsible for compliance with the security requirements and shall ensure that any company representative, courier or delivery personnel are aware of these special procedures pertaining to hand carried bids.**

<b>NOTICE OF VISITOR(S)</b>		
<b>1. Date(s) of Visit (<i>Inclusive</i>)</b>		<b>2. Arrival Time</b>
<b>3. Name of Visitor(s) (<i>Last, First</i>)</b>		<b>4. Agency/Company of Visitor</b>
<b>5. Name of Person Being Visited (<i>Include Div, Br, Sec</i>)</b>	<b>6. Suite Number</b>	<b>7. Telephone Number</b>
<b>8. Contact Person (<i>if other than Person Being Visited</i>)</b>		<b>9. Telephone Number</b>
<b>10. Other Comments or Instructions</b>		
<ul style="list-style-type: none"><li>- All visitors must report to the Public Affairs Office, Suite 980</li><li>- Visitors must use the Visitor Tag provided.</li><li>- Visitors must be escorted to Corps of Engineers floors</li><li>- Parking validation is only available for Engineering Division, Construction-Operations, and Information Management field personnel.</li><li>- Delivery personnel will be validated for 30 minutes only.</li></ul>		

## 52.216-1 TYPE OF CONTRACT (APR 1984)

The Government contemplates award of a Firm Fixed Price contract resulting from this solicitation.

(End of clause)

## 52.217-5 EVALUATION OF OPTIONS (JUL 1990)

(a) Except when it is determined in accordance with FAR 17.206(b) not to be in the Government's best interests, the Government will evaluate offers for award purposes by adding the total price for all options to the total price for the basic requirement. Evaluation of options will not obligate the Government to exercise the option(s).

(b) The Government may reject an offer as nonresponsive if it is materially unbalanced as to prices for the basic requirement and the option quantities. An offer is unbalanced when it is based on prices significantly less than cost for some work and prices which are significantly overstated for other work.

(End of provision)

## 52.219-4003 SMALL BUSINESS AND SMALL DISADVANTAGED BUSINESS SUBCONTRACTING

Offerors are cautioned that failure to comply in good faith with the CONTRACT CLAUSE entitled (1) "Utilization of Small, Small Disadvantaged and Women-Owned Small Business Concerns, FAR 52-219-8" and (2) Small, Small Disadvantaged and Women-Owned Small Business Subcontracting Plan, FAR 52.219-9 (Alternate I)," when applicable, will be a material breach of contract. In order to assist prime contractors in developing a source list of Small and Small Disadvantaged Business Concerns, you are encouraged to contact Minority Contractor Associations, the Minority Business Development Agency, and the appropriate General Business Service Centers in your standard Metropolitan Statistical Area, addresses of which may be obtain from:

Write: US Army Engineer District, Los Angeles  
ATTN: CESPL-DD-B  
P.O. Box 532711  
Los Angeles, California 90053-2325  
Telephone: Daniel Hanas  
Small and Disadvantaged Business Utilization  
Specialist  
Area Code (213) 452-3937

## 52.225-9 BUY AMERICAN ACT—CONSTRUCTION MATERIALS (MAY 2002)

(a) Definitions. As used in this clause--

Component means an article, material, or supply incorporated directly into a construction material.

Construction material means an article, material, or supply brought to the construction site by the Contractor or a subcontractor for incorporation into the building or work. The term also includes an item brought to the site preassembled from articles, materials, or supplies. However, emergency life safety systems, such as emergency lighting, fire alarm, and audio evacuation systems, that are discrete systems incorporated into a public building or work and that are produced as complete systems, are evaluated as a single and distinct construction material regardless of when or how the individual parts or components of those systems are delivered to the construction site. Materials purchased directly by the Government are supplies, not construction material.

Cost of components means--

(1) For components purchased by the Contractor, the acquisition cost, including transportation costs to the place of incorporation into the end product (whether or not such costs are paid to a domestic firm), and any applicable duty (whether or not a duty-free entry certificate is issued); or

(2) For components manufactured by the Contractor, all costs associated with the manufacture of the component, including transportation costs as described in paragraph (1) of this definition, plus allocable overhead costs, but excluding profit. Cost of components does not include any costs associated with the manufacture of the end product.

Domestic construction material means--

(1) An unmanufactured construction material mined or produced in the United States; or

(2) A construction material manufactured in the United States, if the cost of its components mined, produced, or manufactured in the United States exceeds 50 percent of the cost of all its components. Components of foreign origin of the same class or kind for which nonavailability determinations have been made are treated as domestic.

Foreign construction material means a construction material other than a domestic construction material.

United States means the 50 States and the District of Columbia, U.S. territories and possessions, Puerto Rico, the Northern Mariana Islands, and any other place subject to U.S. jurisdiction, but does not include leased bases.

(b) Domestic preference. (1) This clause implements the Buy American Act (41 U.S.C. 10a-10d) by providing a preference for domestic construction material. The Contractor shall use only domestic construction material in performing this contract, except as provided in paragraphs (b)(2) and (b)(3) of this clause.

(2) This requirement does not apply to the construction material or components listed by the Government as follows: none [Contracting Officer to list applicable excepted materials or indicate "none"]

(3) The Contracting Officer may add other foreign construction material to the list in paragraph (b)(2) of this clause if the Government determines that

(i) The cost of domestic construction material would be unreasonable. The cost of a particular domestic construction material subject to the requirements of the Buy American Act is unreasonable when the cost of such material exceeds the cost of foreign material by more than 6 percent;

(ii) The application of the restriction of the Buy American Act to a particular construction material would be impracticable or inconsistent with the public interest; or

(iii) The construction material is not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities of a satisfactory quality.

(c) Request for determination of inapplicability of the Buy American Act. (1)(i) Any Contractor request to use foreign construction material in accordance with paragraph (b)(3) of this clause shall include adequate information for Government evaluation of the request, including--

(A) A description of the foreign and domestic construction materials;

(B) Unit of measure;

(C) Quantity;

(D) Price;

(E) Time of delivery or availability;

(F) Location of the construction project;

(G) Name and address of the proposed supplier; and

(H) A detailed justification of the reason for use of foreign construction materials cited in accordance with paragraph (b)(3) of this clause.

(ii) A request based on unreasonable cost shall include a reasonable survey of the market and a completed price comparison table in the format in paragraph (d) of this clause.

(iii) The price of construction material shall include all delivery costs to the construction site and any applicable duty (whether or not a duty-free certificate may be issued).

(iv) Any Contractor request for a determination submitted after contract award shall explain why the Contractor could not reasonably foresee the need for such determination and could not have requested the determination before contract award. If the Contractor does not submit a satisfactory explanation, the Contracting Officer need not make a determination.

(2) If the Government determines after contract award that an exception to the Buy American Act applies and the Contracting Officer and the Contractor negotiate adequate consideration, the Contracting Officer will modify the contract to allow use of the foreign construction material. However, when the basis for the exception is the unreasonable price of a domestic construction material, adequate consideration is not less than the differential established in paragraph (b)(3)(i) of this clause.

(3) Unless the Government determines that an exception to the Buy American Act applies, use of foreign construction material is noncompliant with the Buy American Act.

(d) Data. To permit evaluation of requests under paragraph (c) of this clause based on unreasonable cost, the Contractor shall include the following information and any applicable supporting data based on the survey of suppliers:

Foreign and Domestic Construction Materials Price Comparison

Construction material description	Unit of measure	Quantity	Price (dollars) \1\
Item 1			
Foreign construction material....			
Domestic construction material...			
Item 2			
Foreign construction material....			
Domestic construction material...			

Include all delivery costs to the construction site and any applicable duty (whether or not a duty-free entry certificate is issued).

List name, address, telephone number, and contact for suppliers surveyed. Attach copy of response; if oral, attach summary.

Include other applicable supporting information.

(End of clause)

**52.225-10 NOTICE OF BUY AMERICAN ACT REQUIREMENT--CONSTRUCTION MATERIALS (MAY 2002)**

(a) Definitions. Construction material, domestic construction material, and foreign construction material, as used in this provision, are defined in the clause of this solicitation entitled "Buy American Act--Construction Materials" (Federal Acquisition Regulation (FAR) clause 52.225-9).

(b) Requests for determinations of inapplicability. An offeror requesting a determination regarding the inapplicability of the Buy American Act should submit the request to the Contracting Officer in time to allow a determination before submission of offers. The offeror shall include the information and applicable supporting data required by paragraphs (c) and (d) of the clause at FAR 52.225-9 in the request. If an offeror has not requested a determination regarding the inapplicability of the Buy American Act before submitting its offer, or has not received a response to a previous request, the offeror shall include the information and supporting data in the offer.

(c) Evaluation of offers. (1) The Government will evaluate an offer requesting exception to the requirements of the Buy American Act, based on claimed unreasonable cost of domestic construction material, by adding to the offered price the appropriate percentage of the cost of such foreign construction material, as specified in paragraph (b)(3)(i) of the clause at FAR 52.225-9.

(2) If evaluation results in a tie between an offeror that requested the substitution of foreign construction material based on unreasonable cost and an offeror that did not request an exception, the Contracting Officer will award to the offeror that did not request an exception based on unreasonable cost.

(d) Alternate offers.

(1) When an offer includes foreign construction material not listed by the Government in this solicitation in paragraph (b)(2) of the clause at FAR 52.225-9, the offeror also may submit an alternate offer based on use of equivalent domestic construction material.

(2) If an alternate offer is submitted, the offeror shall submit a separate Standard Form 1442 for the alternate offer, and a separate price comparison table prepared in accordance with paragraphs (c) and (d) of the clause at FAR 52.225-9 for the offer that is based on the use of any foreign construction material for which the Government has not yet determined an exception applies.

(3) If the Government determines that a particular exception requested in accordance with paragraph (c) of the clause at FAR 52.225-9 does not apply, the Government will evaluate only those offers based on use of the equivalent domestic construction material, and the offeror shall be required to furnish such domestic construction material. An offer based on use of the foreign construction material for which an exception was requested--

(i) Will be rejected as nonresponsive if this acquisition is conducted by sealed bidding; or

(ii) May be accepted if revised during negotiations.

(End of provision)

**52.225-13 RESTRICTIONS ON CERTAIN FOREIGN PURCHASES (JUL 2000)**

(a) The Contractor shall not acquire, for use in the performance of this contract, any supplies or services originating from sources within, or that were located in or transported from or through, countries whose products are banned from importation into the United States under regulations of the Office of Foreign Assets Control, Department of the Treasury. Those countries are Cuba, Iran, Iraq, Libya, North Korea, Sudan, the territory of Afghanistan controlled by the Taliban, and Serbia (excluding the territory of Kosovo).



(b) The Contractor shall not acquire for use in the performance of this contract any supplies or services from entities controlled by the government of Iraq.

(c) The Contractor shall insert this clause, including this paragraph (c), in all subcontracts.

(End of clause)

#### 52.225-15 SANCTIONED EUROPEAN UNION COUNTRY END PRODUCTS (FEB 2000)

(a) Definitions. As used in this clause--

Sanctioned European Union country end product means an article that--

(1) Is wholly the growth, product, or manufacture of a sanctioned European Union (EU) member state; or

(2) In the case of an article that consists in whole or in part of materials from another country, has been substantially transformed in a sanctioned EU member state into a new and different article of commerce with a name, character, or use distinct from that of the article or articles from which it was transformed. The term refers to a product offered for purchase under a supply contract, but for purposes of calculating the value of the end product includes services (except transportation services) incidental to the article, provided that the value of those incidental services does not exceed that of the article itself.

Sanctioned European Union member state means Austria, Belgium, Denmark, Finland, France, Ireland, Italy, Luxembourg, the Netherlands, Sweden, or the United Kingdom.

(b) The Contractor shall not deliver any sanctioned European Union country end products under this contract.

(End of clause)

#### 52.228-1 BID GUARANTEE (SEP 1996)

(a) Failure to furnish a bid guarantee in the proper form and amount, by the time set for opening of bids, may be cause for rejection of the bid.

(b) The bidder shall furnish a bid guarantee in the form of a firm commitment, e.g., bid bond supported by good and sufficient surety or sureties acceptable to the Government, postal money order, certified check, cashier's check, irrevocable letter of credit, or, under Treasury Department regulations, certain bonds or notes of the United States. The Contracting Officer will return bid guarantees, other than bid bonds, (1) to unsuccessful bidders as soon as practicable after the opening of bids, and (2) to the successful bidder upon execution of contractual documents and bonds (including any necessary coinsurance or reinsurance agreements), as required by the bid as accepted.-

(c) The amount of the bid guarantee shall be 20% percent of the bid price or \$3,000,000.00, whichever is less.-

(d) If the successful bidder, upon acceptance of its bid by the Government within the period specified for acceptance, fails to execute all contractual documents or furnish executed bond(s) within 7 days after receipt of the forms by the bidder, the Contracting Officer may terminate the contract for default.-

(e) In the event the contract is terminated for default, the bidder is liable for any cost of acquiring the work that exceeds the amount of its bid, and the bid guarantee is available to offset the difference.

(End of clause)

## 52.228-4506 INDIVIDUAL SURETIES IN SUPPORT OF BID BONDS

Bidder/offers utilizing individual sureties in support of a bid bond shall include a Standard Form (SF) 28 (Affidavit of Individual Surety), accompanied by a pledge of acceptable assets from each person acting as an individual surety, and include these with the SF 24 (Bid Bond), and the bid itself (see clause titled "Pledges of Assets," FAR 52.228-11).

Pledges of acceptable assets shall be in the form of (1) evidence of an escrow account and/or (2) a recorded lien on real estate. If this is an RFP, failure to provide required documentation described herein may cause the offeror to be deemed "unacceptable".

## 52.228-4507 BID GUARANTEE FORM AND AMOUNT

When bids/proposals exceed \$100,000, the offeror shall furnish a separated bid guarantee in accordance with the solicitation provision titled "Bid Guarantee", FAR 52.228-1. In accordance with FAR 28.101-2 the bid guarantee amount shall be a least 20 percent of the "bid price" but shall not exceed \$3 million. When the penal sum is expressed as a percentage, a maximum dollar limitation may be stated. If there are option line items on the Pricing Schedule (Schedule B), the term "bid price" is hereby defined as the total bid not to include any amount for line items designated as "options". In bids/proposals that contain "additives", the "bid price" is defined as the total of all bid items including additive line items. FAR 28.106-1 states that a Standard Form (SF) 24 shall be used for the bid bond. In accordance with FAR 28.202(a)(1), corporate sureties utilized must appear on the list contained in the Department of Treasury Circular 570 titled "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and Acceptable Reinsuring Companies."

## 52.232-38 SUBMISSION OF ELECTRONIC FUNDS TRANSFER INFORMATION WITH OFFER (MAY 1999)

The offeror shall provide, with its offer, the following information that is required to make payment by electronic funds transfer (EFT) under any contract that results from this solicitation. This submission satisfies the requirement to provide EFT information under paragraphs (b)(1) and (j) of the clause at 52.232-34, Payment by Electronic Funds Transfer--Other than Central Contractor Registration.

- (1) The solicitation number (or other procurement identification number).
- (2) The offeror's name and remittance address, as stated in the offer.
- (3) The signature (manual or electronic, as appropriate), title, and telephone number of the offeror's official authorized to provide this information.
- (4) The name, address, and 9-digit Routing Transit Number of the offeror's financial agent.
- (5) The offeror's account number and the type of account (checking, savings, or lockbox).
- (6) If applicable, the Fedwire Transfer System telegraphic abbreviation of the offeror's financial agent.
- (7) If applicable, the offeror shall also provide the name, address, telegraphic abbreviation, and 9-digit Routing Transit Number of the correspondent financial institution receiving the wire transfer payment if the offeror's financial agent is not directly on-line to the Fedwire and, therefore, not the receiver of the wire transfer payment.

(End of provision)

## 52.233-2 SERVICE OF PROTEST (AUG 1996)

- (a) Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accounting Office (GAO), shall be

served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from Daniel Carrasco, C/O Mary Ann Powers, USAED-Los Angeles, P.O. Box 532711, Los Angeles, CA 90053-2325. The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

(End of provision)

52.236-27 SITE VISIT (CONSTRUCTION) (FEB 1995)

(a) The clauses at 52.236-2, Differing Site Conditions, and 52.236-3, Site Investigations and Conditions Affecting the Work, will be included in any contract awarded as a result of this solicitation. Accordingly, offerors or quoters are urged and expected to inspect the site where the work will be performed.

(b) An organized site visit has been scheduled for-  
Tuesday, July 22, 2003 at 9:00 a.m.

(c) Participants will meet at-  
The Intersection of Front Street and Highway 79

For additional information please contact::

Name: **Kevin Thomas**  
Email Address: **Kevin.J.Thomas@usace.army.mil**  
Telephone: **858/674-6765**

(End of provision)

52.252-1 SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (FEB 1998)

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at this/these address(es):

<http://www.anet.gov.far>  
<http://farsite.hill.af.mil>  
<http://www.dtic.mil.dfars>

(End of provision)

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**Section 00600**  
**Representations & Certifications**

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## CLAUSES INCORPORATED BY FULL TEXT

## 52.203-2 CERTIFICATE OF INDEPENDENT PRICE DETERMINATION (APR 1985)

(a) The offeror certifies that --

(1) The prices in this offer have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other offeror or competitor relating to --

(i) Those prices,

(ii) The intention to submit an offer, or

(iii) The methods of factors used to calculate the prices offered:

(2) The prices in this offer have not been and will not be knowingly disclosed by the offeror, directly or indirectly, to any other offeror or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and

(3) No attempt has been made or will be made by the offeror to induce any other concern to submit or not to submit an offer for the purpose of restricting competition.

(b) Each signature on the offer is considered to be a certification by the signatory that the signatory --

(1) Is the person in the offeror's organization responsible for determining the prices offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) of this provision; or

(2) (i) Has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) of this provision \_\_\_\_\_ (insert full name of person(s) in the offeror's organization responsible for determining the prices offered in this bid or proposal, and the title of his or her position in the offeror's organization);

(ii) As an authorized agent, does certify that the principals named in subdivision (b)(2)(i) above have not participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above; and

(iii) As an agent, has not personally participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) of this provision.

(c) If the offeror deletes or modifies subparagraph (a)(2) of this provision, the offeror must furnish with its offer a signed statement setting forth in detail the circumstances of the disclosure.

(End of clause)

## 52.203-11 CERTIFICATION AND DISCLOSURE REGARDING PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (APR 1991)

(a) The definitions and prohibitions contained in the clause, at FAR 52.203-12, Limitation on Payments to Influence Certain Federal Transactions, included in this solicitation, are hereby incorporated by reference in paragraph (b) of this Certification.

(b) The offeror, by signing its offer, hereby certifies to the best of his or her knowledge and belief that on or after December 23, 1989,--

(1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan, or cooperative agreement;

(2) If any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress or an employee of a Member of Congress on his or her behalf in connection with this solicitation, the offeror shall complete and submit, with its offer, OMB standard form LLL, Disclosure of Lobbying Activities, to the Contracting Officer; and

(3) He or she will include the language of this certification in all subcontract awards at any tier and require that all recipients of subcontract awards in excess of \$100,000 shall certify and disclose accordingly.

(2) Submission of this certification and disclosure is a prerequisite for making or entering into this contract imposed by section 1352, title 31, United States Code. Any person who makes an expenditure prohibited under this provision, shall be subject to a civil penalty of not less than \$10,000, and not more than \$100,000, for each such failure.

(End of provision)

#### 52.204-3 TAXPAYER IDENTIFICATION (OCT 1998)

##### (a) Definitions.

“Common parent,” as used in this provision, means that corporate entity that owns or controls an affiliated group of corporations that files its Federal income tax returns on a consolidated basis, and of which the offeror is a member.

“Taxpayer Identification Number (TIN),” as used in this provision, means the number required by the Internal Revenue Service (IRS) to be used by the offeror in reporting income tax and other returns. The TIN may be either a Social Security Number or an Employer Identification Number.

(b) All offerors must submit the information required in paragraphs (d) through (f) of this provision to comply with debt collection requirements of 31 U.S.C. 7701(c) and 3325(d), reporting requirements of 26 U.S.C. 6041, 6041A, and 6050M, and implementing regulations issued by the IRS. If the resulting contract is subject to the payment reporting requirements described in Federal Acquisition Regulation (FAR) 4.904, the failure or refusal by the offeror to furnish the information may result in a 31 percent reduction of payments otherwise due under the contract.

(c) The TIN may be used by the Government to collect and report on any delinquent amounts arising out of the offeror's relationship with the Government (31 U.S.C. 7701(c)(3)). If the resulting contract is subject to the payment reporting requirements described in FAR 4.904, the TIN provided hereunder may be matched with IRS records to verify the accuracy of the offeror's TIN.

##### (d) Taxpayer Identification Number (TIN).

\_\_\_ TIN: \_\_\_\_\_

\_\_\_ TIN has been applied for.

\_\_\_ TIN is not required because:

\_\_\_ Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the United States and does not have an office or place of business or a fiscal paying agent in the United States;

\_\_\_ Offeror is an agency or instrumentality of a foreign government;

\_\_\_ Offeror is an agency or instrumentality of the Federal Government.

(e) Type of organization.

\_\_\_ Sole proprietorship;

\_\_\_ Partnership;

\_\_\_ Corporate entity (not tax-exempt);

\_\_\_ Corporate entity (tax-exempt);

\_\_\_ Government entity (Federal, State, or local);

\_\_\_ Foreign government;

\_\_\_ International organization per 26 CFR 1.6049-4;

\_\_\_ Other \_\_\_\_\_

(f) Common parent.

\_\_\_ Offeror is not owned or controlled by a common parent as defined in paragraph (a) of this provision.

\_\_\_ Name and TIN of common parent:

Name \_\_\_\_\_

TIN \_\_\_\_\_

(End of provision)

#### 52.204-6 DATA UNIVERSAL NUMBERING SYSTEM (DUNS) NUMBER (JUN 99)

(a) The offeror shall enter, in the block with its name and address on the cover page of its offer, the annotation "DUNS" followed by the DUNS number that identifies the offeror's name and address exactly as stated in the offer.

(b) If the offeror does not have a DUNS number, it should contact Dun and Bradstreet directly to obtain one. A DUNS number will be provided immediately by telephone at no charge to the offeror. For information on obtaining a DUNS number, the offeror, if located within the United States, should call Dun and Bradstreet at 1-800-333-0505. The offeror should be prepared to provide the following information:

(1) Company name.

(2) Company address.

(3) Company telephone number.



- (4) Line of business.
- (5) Chief executive officer/key manager.
- (6) Date the company was started.
- (7) Number of people employed by the company.
- (8) Company affiliation.

(c) Offerors located outside the United States may obtain the location and phone number of the local Dun and Bradstreet Information Services office from the Internet Home Page at <http://www.customerservice@dnb.com>. If an offeror is unable to locate a local service center, it may send an e-mail to Dun and Bradstreet at [globalinfo@mail.dnb.com](mailto:globalinfo@mail.dnb.com).

(End of provision)

52.209-5 CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS (DEC 2001)

(a)(1) The Offeror certifies, to the best of its knowledge and belief, that--

(i) The Offeror and/or any of its Principals--

(A) Are ( ) are not ( ) presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;

(B) Have ( ) have not ( ), within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

(C) Are ( ) are not ( ) presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in subdivision (a)(1)(i)(B) of this provision.

(ii) The Offeror has ( ) has not ( ), within a three-year period preceding this offer, had one or more contracts terminated for default by any Federal agency.

(2) "Principals," for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

THIS CERTIFICATION CONCERNS A MATTER WITHIN THE JURISDICTION OF AN AGENCY OF THE UNITED STATES AND THE MAKING OF A FALSE, FICTITIOUS, OR FRAUDULENT CERTIFICATION MAY RENDER THE MAKER SUBJECT TO PROSECUTION UNDER SECTION 1001, TITLE 18, UNITED STATES CODE.

(b) The Offeror shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

(c) A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Offeror's responsibility. Failure of the Offeror to furnish a certification or

provide such additional information as requested by the Contracting Officer may render the Offeror nonresponsible.

(d) Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of an Offeror is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

(e) The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Offeror knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

(End of provision)

52.219-1 SMALL BUSINESS PROGRAM REPRESENTATIONS (APR 2002) - ALTERNATE I (APR 2002)

(a)(1) The North American Industry Classification System (NAICS) code for this acquisition is 237990 .

(2) The small business size standard is \$28,500,000.00.

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

(b) Representations. (1) The offeror represents as part of its offer that it ( ) is, ( ) is not a small business concern.

(2) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents, for general statistical purposes, that it ( ) is, ( ) is not a small disadvantaged business concern as defined in 13 CFR 124.1002.

(3) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents as part of its offer that it ( ) is, ( ) is not a women-owned small business concern.

(4) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents as part of its offer that it ( ) is, ( ) is not a veteran-owned small business concern.

(5) (Complete only if the offeror represented itself as a veteran-owned small business concern in paragraph (b)(4) of this provision.) The offeror represents as part of its offer that it ( ) is, ( ) is not a service-disabled veteran-owned small business concern.

(6) [Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.] The offeror represents, as part of its offer, that--

(i) It ( ) is, ( ) is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration, and no material change in ownership and control, principal office, or HUBZone employee percentage has occurred since it was certified by the Small Business Administration in accordance with 13 CFR part 126; and

(ii) It ( ) is, ( ) is not a joint venture that complies with the requirements of 13 CFR part 126, and the representation in paragraph (b)(6)(i) of this provision is accurate for the HUBZone small business concern

or concerns that are participating in the joint venture. (The offeror shall enter the name or names of the HUBZone small business concern or concerns that are participating in the joint venture: \_\_\_\_\_.) Each HUBZone small business concern participating in the joint venture shall submit a separate signed copy of the HUBZone representation.

(7) (Complete if offeror represented itself as disadvantaged in paragraph (b)(2) of this provision.) The offeror shall check the category in which its ownership falls:

\_\_\_\_\_ Black American.

\_\_\_\_\_ Hispanic American.

\_\_\_\_\_ Native American (American Indians, Eskimos, Aleuts, or Native Hawaiians).

\_\_\_\_\_ Asian-Pacific American (persons with origins from Burma, Thailand, Malaysia, Indonesia, Singapore, Brunei, Japan, China, Taiwan, Laos, Cambodia (Kampuchea), Vietnam, Korea, The Philippines, U.S. Trust Territory of the Pacific Islands (Republic of Palau), Republic of the Marshall Islands, Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam, Samoa, Macao, Hong Kong, Fiji, Tonga, Kiribati, Tuvalu, or Nauru).

\_\_\_\_\_ Subcontinent Asian (Asian-Indian) American (persons with origins from India, Pakistan, Bangladesh, Sri Lanka, Bhutan, the Maldives Islands, or Nepal).

\_\_\_\_\_ Individual/concern, other than one of the preceding.

(c) Definitions. As used in this provision--

Service-disabled veteran-owned small business concern--

(1) Means a small business concern--

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

"Small business concern," means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR Part 121 and the size standard in paragraph (a) of this provision.

Veteran-owned small business concern means a small business concern--

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

"Women-owned small business concern," means a small business concern --

(1) That is at least 51 percent owned by one or more women or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; or

(2) Whose management and daily business operations are controlled by one or more women.

(d) Notice.

(1) If this solicitation is for supplies and has been set aside, in whole or in part, for small business concerns, then the clause in this solicitation providing notice of the set-aside contains restrictions on the source of the end items to be furnished.

(2) Under 15 U.S.C. 645(d), any person who misrepresents a firm's status as a small, HUBZone small, small disadvantaged, or women-owned small business concern in order to obtain a contract to be awarded under the preference programs established pursuant to section 8(a), 8(d), 9, or 15 of the Small Business Act or any other provision of Federal law that specifically references section 8(d) for a definition of program eligibility, shall--

(i) Be punished by imposition of fine, imprisonment, or both;

(ii) Be subject to administrative remedies, including suspension and debarment; and

(iii) Be ineligible for participation in programs conducted under the authority of the Act.

(End of provision)

#### 52.219-3 NOTICE OF TOTAL HUBZONE SET-ASIDE (JAN 1999)

(a) Definition. HUBZone small business concern, as used in this clause, means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.

(b) General. (1) Offers are solicited only from HUBZone small business concerns. Offers received from concerns that are not HUBZone small business concerns shall not be considered.

(2) Any award resulting from this solicitation will be made to a HUBZone small business concern.

(c) Agreement. A HUBZone small business concern agrees that in the performance of the contract, in the case of a contract for--

(1) Services (except construction), at least 50 percent of the cost of personnel for contract performance will be spent for employees of the concern or employees of other HUBZone small business concerns;

(2) Supplies (other than acquisition from a nonmanufacturer of the supplies), at least 50 percent of the cost of manufacturing, excluding the cost of materials, will be performed by the concern or other HUBZone small business concerns;

(3) General construction, at least 15 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other HUBZone small business concerns; or

(4) Construction by special trade contractors, at least 25 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other HUBZone small business concerns.

(d) A HUBZone joint venture agrees that, in the performance of the contract, the applicable percentage specified in paragraph (c) of this clause will be performed by the HUBZone small business participant or participants.

(e) A HUBZone small business concern nonmanufacturer agrees to furnish in performing this contract only end items manufactured or produced by HUBZone small business manufacturer concerns. This paragraph does not apply in connection with construction or service contracts.

(End of clause)

#### 52.219-8 UTILIZATION OF SMALL BUSINESS CONCERNS (OCT 2000)

(a) It is the policy of the United States that small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns shall have the maximum practicable opportunity to participate in performing contracts let by any Federal agency, including contracts and subcontracts for subsystems, assemblies, components, and related services for major systems. It is further the policy of the United States that its prime contractors establish procedures to ensure the timely payment of amounts due pursuant to the terms of their subcontracts with small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns.

(b) The Contractor hereby agrees to carry out this policy in the awarding of subcontracts to the fullest extent consistent with efficient contract performance. The Contractor further agrees to cooperate in any studies or surveys as may be conducted by the United States Small Business Administration or the awarding agency of the United States as may be necessary to determine the extent of the Contractor's compliance with this clause.

Definitions. As used in this contract--

HUBZone small business concern means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.

Service-disabled veteran-owned small business concern--

(1) Means a small business concern--

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

Small business concern means a small business as defined pursuant to Section 3 of the Small Business Act and relevant regulations promulgated pursuant thereto.

Small disadvantaged business concern means a small business concern that represents, as part of its offer that--

- (1) It has received certification as a small disadvantaged business concern consistent with 13 CFR part 124, subpart B;
- (2) No material change in disadvantaged ownership and control has occurred since its certification;
- (3) Where the concern is owned by one or more individuals, the net worth of each individual upon whom the certification is based does not exceed \$750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and
- (4) It is identified, on the date of its representation, as a certified small disadvantaged business in the database maintained by the Small Business Administration (PRO-Net).

Veteran-owned small business concern means a small business concern--

- (1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and
- (2) The management and daily business operations of which are controlled by one or more veterans.

Women-owned small business concern means a small business concern--

- (1) That is at least 51 percent owned by one or more women, or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and
  - (2) Whose management and daily business operations are controlled by one or more women.
- (d) Contractors acting in good faith may rely on written representations by their subcontractors regarding their status as a small business concern, a veteran-owned small business concern, a service-disabled veteran-owned small business concern, a HUBZone small business concern, a small disadvantaged business concern, or a women-owned small business concern.

(End of clause)

#### 52.222-21 PROHIBITION OF SEGREGATED FACILITIES (FEB 1999)

(a) Segregated facilities, as used in this clause, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees, that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex, or national origin because of written or oral policies or employee custom. The term does not include separate or single-user rest rooms or necessary dressing or sleeping areas provided to assure privacy between the sexes.

(b) The Contractor agrees that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The Contractor agrees that a breach of this clause is a violation of the Equal Opportunity clause in this contract.

(c) The Contractor shall include this clause in every subcontract and purchase order that is subject to the Equal Opportunity clause of this contract.

(End of clause)

## 52.222-22 PREVIOUS CONTRACTS AND COMPLIANCE REPORTS (FEB 1999)

The offeror represents that --

(a) ☐ It has, ☐ has not participated in a previous contract or subcontract subject to the Equal Opportunity clause of this solicitation;

(b) ☐ It has, ☐ has not, filed all required compliance reports; and

(c) Representations indicating submission of required compliance reports, signed by proposed subcontractors, will be obtained before subcontract awards.

(End of provision)

## 52.223-13 CERTIFICATION OF TOXIC CHEMICAL RELEASE REPORTING (OCT 2000)

(a) Submission of this certification is a prerequisite for making or entering into this contract imposed by Executive Order 12969, August 8, 1995.

(b) By signing this offer, the offeror certifies that--

(1) As the owner or operator of facilities that will be used in the performance of this contract that are subject to the filing and reporting requirements described in section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023) and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106), the offeror will file and continue to file for such facilities for the life of the contract the Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of EPCRA and section 6607 of PPA; or

(2) None of its owned or operated facilities to be used in the performance of this contract is subject to the Form R filing and reporting requirements because each such facility is exempt for at least one of the following reasons: (Check each block that is applicable.)

☐ (i) The facility does not manufacture, process or otherwise use any toxic chemicals listed under section 313(c) of EPCRA, 42 U.S.C. 11023(c);

☐ (ii) The facility does not have 10 or more full-time employees as specified in section 313.(b)(1)(A) of EPCRA 42 U.S.C. 11023(b)(1)(A);

☐ (iii) The facility does not meet the reporting thresholds of toxic chemicals established under section 313(f) of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);

☐ (iv) The facility does not fall within Standard Industrial Classification Code (SIC) major groups 20 through 39 or their corresponding North American Industry Classification System (NAICS) sectors 31 through 33; or

☐ (v) The facility is not located within any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Northern Mariana Islands, or any other territory or possession over which the United States has jurisdiction.

(End of clause)

252.204-7001 COMMERCIAL AND GOVERNMENT ENTITY (CAGE) CODE REPORTING (AUG 1999)

(a) The offeror is requested to enter its CAGE code on its offer in the block with its name and address. The CAGE code entered must be for that name and address. Enter "CAGE" before the number.

(b) If the offeror does not have a CAGE code, it may ask the Contracting Officer to request one from the Defense Logistics Information Service (DLIS). The Contracting Officer will--

(1) Ask the Contractor to complete section B of a DD Form 2051, Request for Assignment of a Commercial and Government Entity (CAGE) Code;

(2) Complete section A and forward the form to DLIS; and

(3) Notify the Contractor of its assigned CAGE code.

(c) Do not delay submission of the offer pending receipt of a CAGE code.

(End of provision)

252.204-7004 REQUIRED CENTRAL CONTRACTOR REGISTRATION (NOV 2001)

(a) Definitions.

As used in this clause--

(1) Central Contractor Registration (CCR) database means the primary DoD repository for contractor information required for the conduct of business with DoD.

(2) Data Universal Numbering System (DUNS) number means the 9-digit number assigned by Dun and Bradstreet Information Services to identify unique business entities.

(3) Data Universal Numbering System +4 (DUNS+4) number means the DUNS number assigned by Dun and Bradstreet plus a 4-digit suffix that may be assigned by a parent (controlling) business concern. This 4-digit suffix may be assigned at the discretion of the parent business concern for such purposes as identifying subunits or affiliates of the parent business concern.

(4) Registered in the CCR database means that all mandatory information, including the DUNS number or the DUNS+4 number, if applicable, and the corresponding Commercial and Government Entity (CAGE) code, is in the CCR database; the DUNS number and the CAGE code have been validated; and all edits have been successfully completed.

(b)(1) By submission of an offer, the offeror acknowledges the requirement that a prospective awardee must be registered in the CCR database prior to award, during performance, and through final payment of any contract resulting from this solicitation, except for awards to foreign vendors for work to be performed outside the United States.

(2) The offeror shall provide its DUNS or, if applicable, its DUNS+4 number with its offer, which will be used by the Contracting Officer to verify that the offeror is registered in the CCR database.

(3) Lack of registration in the CCR database will make an offeror ineligible for award.

(4) DoD has established a goal of registering an applicant in the CCR database within 48 hours after receipt of a complete and accurate application via the Internet. However, registration of an applicant submitting an application through a method other than the Internet may take up to 30 days. Therefore, offerors that are not registered should consider applying for registration immediately upon receipt of this solicitation.



(c) The Contractor is responsible for the accuracy and completeness of the data within the CCR, and for any liability resulting from the Government's reliance on inaccurate or incomplete data. To remain registered in the CCR database after the initial registration, the Contractor is required to confirm on an annual basis that its information in the CCR database is accurate and complete.

(d) Offerors and contractors may obtain information on registration and annual confirmation requirements by calling 1-888-227-2423, or via the Internet at <http://www.ccr.gov>.

(End of clause)

252.209-7001 DISCLOSURE OF OWNERSHIP OR CONTROL BY THE GOVERNMENT OF A  
TERRORIST COUNTRY (MAR 1998)

(a) "Definitions."

As used in this provision --

(a) "Government of a terrorist country" includes the state and the government of a terrorist country, as well as any political subdivision, agency, or instrumentality thereof.

(2) "Terrorist country" means a country determined by the Secretary of State, under section 6(j)(1)(A) of the Export Administration Act of 1979 (50 U.S.C. App. 2405(j)(i)(A)), to be a country the government of which has repeatedly provided support for such acts of international terrorism. As of the date of this provision, terrorist countries include: Cuba, Iran, Iraq, Libya, North Korea, Sudan, and Syria.

(3) "Significant interest" means --

(i) Ownership of or beneficial interest in 5 percent or more of the firm's or subsidiary's securities. Beneficial interest includes holding 5 percent or more of any class of the firm's securities in "nominee shares," "street names," or some other method of holding securities that does not disclose the beneficial owner;

(ii) Holding a management position in the firm, such as a director or officer;

(iii) Ability to control or influence the election, appointment, or tenure of directors or officers in the firm;

(iv) Ownership of 10 percent or more of the assets of a firm such as equipment, buildings, real estate, or other tangible assets of the firm; or

(v) Holding 50 percent or more of the indebtedness of a firm.

(b) "Prohibition on award."

In accordance with 10 U.S.C. 2327, no contract may be awarded to a firm or a subsidiary of a firm if the government of a terrorist country has a significant interest in the firm or subsidiary or, in the case of a subsidiary, the firm that owns the subsidiary, unless a waiver is granted by the Secretary of Defense.

(c) "Disclosure."

If the government of a terrorist country has a significant interest in the Offeror or a subsidiary of the Offeror, the Offeror shall disclose such interest in an attachment to its offer. If the Offeror is a subsidiary, it shall also disclose any significant interest the government of a terrorist country has in any firm that owns or controls the subsidiary. The disclosure shall include --

(1) Identification of each government holding a significant interest; and

(2) A description of the significant interest held by each government.

(End of provision)

252.247-7022 REPRESENTATION OF EXTENT OF TRANSPORTATION BY SEA (AUG 1992)

(a) The Offeror shall indicate by checking the appropriate blank in paragraph (b) of this provision whether transportation of supplies by sea is anticipated under the resultant contract. The term supplies is defined in the Transportation of Supplies by Sea clause of this solicitation.

(b) Representation. The Offeror represents that it:

\_\_\_\_ (1) Does anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

\_\_\_\_ (2) Does not anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

(c) Any contract resulting from this solicitation will include the Transportation of Supplies by Sea clause. If the Offeror represents that it will not use ocean transportation, the resulting contract will also include the Defense FAR Supplement clause at 252.247-7024, Notification of Transportation of Supplies by Sea.

(End of provision)

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## CLAUSES INCORPORATED BY FULL TEXT

## 52.202-1 DEFINITIONS (DEC 2001)

(a) Agency head or head of the agency means the Secretary (Attorney General, Administrator, Governor, Chairperson, or other chief official, as appropriate) of the agency, unless otherwise indicated, including any deputy or assistant chief official of the executive agency.

(b) Commercial component means any component that is a commercial item.

(c) Commercial item means--

(1) Any item, other than real property, that is of a type customarily used by the general public or by non-governmental entities for purposes other than governmental purposes, and that--

(i) Has been sold, leased, or licensed to the general public; or

(ii) Has been offered for sale, lease, or license to the general public;

(2) Any item that evolved from an item described in paragraph (c)(1) of this clause through advances in technology or performance and that is not yet available in the commercial marketplace, but will be available in the commercial marketplace in time to satisfy the delivery requirements under a Government solicitation;

(3) Any item that would satisfy a criterion expressed in paragraphs (c)(1) or (c)(2) of this clause, but for--

(i) Modifications of a type customarily available in the commercial marketplace; or

(ii) Minor modifications of a type not customarily available in the commercial marketplace made to meet Federal Government requirements. "Minor" modifications means modifications that do not significantly alter the nongovernmental function or essential physical characteristics of an item or component, or change the purpose of a process. Factors to be considered in determining whether a modification is minor include the value and size of the modification and the comparative value and size of the final product. Dollar values and percentages may be used as guideposts, but are not conclusive evidence that a modification is minor;

(4) Any combination of items meeting the requirements of paragraphs (c)(1), (2), (3), or (5) of this clause that are of a type customarily combined and sold in combination to the general public;

(5) Installation services, maintenance services, repair services, training services, and other services if--

(i) Such services are procured for support of an item referred to in paragraph (c)(1), (2), (3), or (4) of this definition, regardless of whether such services are provided by the same source or at the same time as the item; and

(ii) The source of such services provides similar services contemporaneously to the general public under terms and conditions similar to those offered to the Federal Government;

(6) Services of a type offered and sold competitively in substantial quantities in the commercial marketplace based on established catalog or market prices for specific tasks performed under standard commercial terms and conditions. This does not include services that are sold based on hourly rates without an established catalog or market price for a specific service performed. For purposes of these services--

(i) Catalog price means a price included in a catalog, price list, schedule, or other form that is regularly maintained by the manufacturer or vendor, is either published or otherwise available for inspection by customers, and states prices at which sales are currently, or were last, made to a significant number of buyers constituting the general public; and

(ii) Market prices means current prices that are established in the course of ordinary trade between buyers and sellers free to bargain and that can be substantiated through competition or from sources independent of the offerors.

(7) Any item, combination of items, or service referred to in subparagraphs (c)(1) through (c)(6), notwithstanding the fact that the item, combination of items, or service is transferred between or among separate divisions, subsidiaries, or affiliates of a Contractor; or

(8) A nondevelopmental item, if the procuring agency determines the item was developed exclusively at private expense and sold in substantial quantities, on a competitive basis, to multiple State and local Governments.

(d) Component means any item supplied to the Government as part of an end item or of another component, except that for use in 52.225-9, and 52.225-11 see the definitions in 52.225-9(a) and 52.225-11(a).

(e) Contracting Officer means a person with the authority to enter into, administer, and/or terminate contracts and make related determinations and findings. The term includes certain authorized representatives of the Contracting Officer acting within the limits of their authority as delegated by the Contracting Officer.

(f) Nondevelopmental item means--

(1) Any previously developed item of supply used exclusively for governmental purposes by a Federal agency, a State or local government, or a foreign government with which the United States has a mutual defense cooperation agreement;

(2) Any item described in paragraph (f)(1) of this definition that requires only minor modification or modifications of a type customarily available in the commercial marketplace in order to meet the requirements of the procuring department or agency; or

(3) Any item of supply being produced that does not meet the requirements of paragraph (f)(1) or (f)(2) solely because the item is not yet in use.

(g) "Contracting Officer" means a person with the authority to enter into, administer, and/or terminate contracts and make related determinations and findings. The term includes certain authorized representatives of the Contracting Officer acting within the limits of their authority as delegated by the Contracting Officer.

(h) Except as otherwise provided in this contract, the term "subcontracts" includes, but is not limited to, purchase orders and changes and modifications to purchase orders under this contract.

(End of clause)

#### 52.203-3 GRATUITIES (APR 1984)

(a) The right of the Contractor to proceed may be terminated by written notice if, after notice and hearing, the agency head or a designee determines that the Contractor, its agent, or another representative--

(1) Offered or gave a gratuity (e.g., an entertainment or gift) to an officer, official, or employee of the Government; and

(2) Intended, by the gratuity, to obtain a contract or favorable treatment under a contract.

(b) The facts supporting this determination may be reviewed by any court having lawful jurisdiction.

(c) If this contract is terminated under paragraph (a) of this clause, the Government is entitled--

(1) To pursue the same remedies as in a breach of the contract; and

(2) In addition to any other damages provided by law, to exemplary damages of not less than 3 nor more than 10 times the cost incurred by the Contractor in giving gratuities to the person concerned, as determined by the agency head or a designee. (This subparagraph (c)(2) is applicable only if this contract uses money appropriated to the Department of Defense.)

(d) The rights and remedies of the Government provided in this clause shall not be exclusive and are in addition to any other rights and remedies provided by law or under this contract.

(End of clause)

#### 52.203-5 COVENANT AGAINST CONTINGENT FEES (APR 1984)

(a) The Contractor warrants that no person or agency has been employed or retained to solicit or obtain this contract upon an agreement or understanding for a contingent fee, except a bona fide employee or agency. For breach or violation of this warranty, the Government shall have the right to annul this contract without liability or, in its discretion, to deduct from the contract price or consideration, or otherwise recover, the full amount of the contingent fee.

(b) "Bona fide agency," as used in this clause, means an established commercial or selling agency, maintained by a contractor for the purpose of securing business, that neither exerts nor proposes to exert improper influence to solicit or obtain Government contracts nor holds itself out as being able to obtain any Government contract or contracts through improper influence.

"Bona fide employee," as used in this clause, means a person, employed by a contractor and subject to the contractor's supervision and control as to time, place, and manner of performance, who neither exerts nor proposes to exert improper influence to solicit or obtain Government contracts nor holds out as being able to obtain any Government contract or contracts through improper influence.

"Contingent fee," as used in this clause, means any commission, percentage, brokerage, or other fee that is contingent upon the success that a person or concern has in securing a Government contract.

"Improper influence," as used in this clause, means any influence that induces or tends to induce a Government employee or officer to give consideration or to act regarding a Government contract on any basis other than the merits of the matter.

(End of clause)

#### 52.203-7 Anti-Kickback Procedures. (JUL 1995)

(a) Definitions.

"Kickback," as used in this clause, means any money, fee, commission, credit, gift, gratuity, thing of value, or compensation of any kind which is provided, directly or indirectly, to any prime Contractor, prime Contractor employee, subcontractor, or subcontractor employee for the purpose of improperly obtaining or rewarding favorable treatment in connection with a prime contract or in connection with a subcontract relating to a prime contract.



"Person," as used in this clause, means a corporation, partnership, business association of any kind, trust, joint-stock company, or individual.

"Prime contract," as used in this clause, means a contract or contractual action entered into by the United States for the purpose of obtaining supplies, materials, equipment, or services of any kind.

"Prime Contractor," as used in this clause, means a person who has entered into a prime contract with the United States.

"Prime Contractor employee," as used in this clause, means any officer, partner, employee, or agent of a prime Contractor.

"Subcontract," as used in this clause, means a contract or contractual action entered into by a prime Contractor or subcontractor for the purpose of obtaining supplies, materials, equipment, or services of any kind under a prime contract.

"Subcontractor," as used in this clause, (1) means any person, other than the prime Contractor, who offers to furnish or furnishes any supplies, materials, equipment, or services of any kind under a prime contract or a subcontract entered into in connection with such prime contract, and (2) includes any person who offers to furnish or furnishes general supplies to the prime Contractor or a higher tier subcontractor.

"Subcontractor employee," as used in this clause, means any officer, partner, employee, or agent of a subcontractor.

(b) The Anti-Kickback Act of 1986 (41 U.S.C. 51-58) (the Act), prohibits any person from -

(1) Providing or attempting to provide or offering to provide any kickback;

(2) Soliciting, accepting, or attempting to accept any kickback; or

(3) Including, directly or indirectly, the amount of any kickback in the contract price charged by a prime Contractor to the United States or in the contract price charged by a subcontractor to a prime Contractor or higher tier subcontractor.

(c)(1) The Contractor shall have in place and follow reasonable procedures designed to prevent and detect possible violations described in paragraph (b) of this clause in its own operations and direct business relationships.

(2) When the Contractor has reasonable grounds to believe that a violation described in paragraph (b) of this clause may have occurred, the Contractor shall promptly report in writing the possible violation. Such reports shall be made to the inspector general of the contracting agency, the head of the contracting agency if the agency does not have an inspector general, or the Department of Justice.

(3) The Contractor shall cooperate fully with any Federal agency investigating a possible violation described in paragraph (b) of this clause.

(4) The Contracting Officer may (i) offset the amount of the kickback against any monies owed by the United States under the prime contract and/or (ii) direct that the Prime Contractor withhold, from sums owed a subcontractor under the prime contract, the amount of any kickback. The Contracting Officer may order the monies withheld under subdivision (c)(4)(ii) of this clause be paid over to the Government unless the Government has already offset those monies under subdivision (c)(4)(i) of this clause. In either case, the Prime Contractor shall notify the Contracting Officer when the monies are withheld.

(5) The Contractor agrees to incorporate the substance of this clause, including this subparagraph (c)(5) but excepting subparagraph (c)(1), in all subcontracts under this contract which exceed \$100,000.

52.203-8 CANCELLATION, RESCISSION, AND RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY (JAN 1997)

(a) If the Government receives information that a contractor or a person has engaged in conduct constituting a violation of subsection (a), (b), (c), or (d) of Section 27 of the Office of Federal Procurement Policy Act (41 U.S.C. 423) (the Act), as amended by section 4304 of the 1996 National Defense Authorization Act for Fiscal Year 1996 (Pub. L. 104-106), the Government may--

(1) Cancel the solicitation, if the contract has not yet been awarded or issued; or

(2) Rescind the contract with respect to which--

(i) The Contractor or someone acting for the Contractor has been convicted for an offense where the conduct constitutes a violation of subsection 27(a) or (b) of the Act for the purpose of either--

(A) Exchanging the information covered by such subsections for anything of value; or

(B) Obtaining or giving anyone a competitive advantage in the award of a Federal agency procurement contract; or

(ii) The head of the contracting activity has determined, based upon a preponderance of the evidence, that the Contractor or someone acting for the Contractor has engaged in conduct constituting an offense punishable under subsections 27(e)(1) of the Act.

(b) If the Government rescinds the contract under paragraph (a) of this clause, the Government is entitled to recover, in addition to any penalty prescribed by law, the amount expended under the contract.

(c) The rights and remedies of the Government specified herein are not exclusive, and are in addition to any other rights and remedies provided by law, regulation, or under this contract.

(End of clause)

52.203-10 PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY (JAN 1997)

(a) The Government, at its election, may reduce the price of a fixed-price type contract and the total cost and fee under a cost-type contract by the amount of profit or fee determined as set forth in paragraph (b) of this clause if the head of the contracting activity or designee determines that there was a violation of subsection 27 (a), (b), or (c) of the Office of Federal Procurement Policy Act, as amended (41 U.S.C. 423), as implemented in section 3.104 of the Federal Acquisition Regulation.

(b) The price or fee reduction referred to in paragraph (a) of this clause shall be--

(1) For cost-plus-fixed-fee contracts, the amount of the fee specified in the contract at the time of award;

(2) For cost-plus-incentive-fee contracts, the target fee specified in the contract at the time of award, notwithstanding any minimum fee or "fee floor" specified in the contract;

(3) For cost-plus-award-fee contracts--

(i) The base fee established in the contract at the time of contract award;

(ii) If no base fee is specified in the contract, 30 percent of the amount of each award fee otherwise payable to the Contractor for each award fee evaluation period or at each award fee determination point.

(4) For fixed-price-incentive contracts, the Government may--

(i) Reduce the contract target price and contract target profit both by an amount equal to the initial target profit specified in the contract at the time of contract award; or

(ii) If an immediate adjustment to the contract target price and contract target profit would have a significant adverse impact on the incentive price revision relationship under the contract, or adversely affect the contract financing provisions, the Contracting Officer may defer such adjustment until establishment of the total final price of the contract. The total final price established in accordance with the incentive price revision provisions of the contract shall be reduced by an amount equal to the initial target profit specified in the contract at the time of contract award and such reduced price shall be the total final contract price.

(5) For firm-fixed-price contracts, by 10 percent of the initial contract price or a profit amount determined by the Contracting Officer from records or documents in existence prior to the date of the contract award.

(c) The Government may, at its election, reduce a prime contractor's price or fee in accordance with the procedures of paragraph (b) of this clause for violations of the Act by its subcontractors by an amount not to exceed the amount of profit or fee reflected in the subcontract at the time the subcontract was first definitively priced.

(d) In addition to the remedies in paragraphs (a) and (c) of this clause, the Government may terminate this contract for default. The rights and remedies of the Government specified herein are not exclusive, and are in addition to any other rights and remedies provided by law or under this contract.

(End of clause)

#### 52.203-12 LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (JUN 1997)

(a) Definitions.

"Agency," as used in this clause, means executive agency as defined in 2.101.

"Covered Federal action," as used in this clause, means any of the following Federal actions:

(1) The awarding of any Federal contract.

(2) The making of any Federal grant.

(3) The making of any Federal loan.

(4) The entering into of any cooperative agreement.

(5) The extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

"Indian tribe" and "tribal organization," as used in this clause, have the meaning provided in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450B) and include Alaskan Natives.

"Influencing or attempting to influence," as used in this clause, means making, with the intent to influence, any communication to or appearance before an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any covered Federal action.

"Local government," as used in this clause, means a unit of government in a State and, if chartered, established, or otherwise recognized by a State for the performance of a governmental duty, including a local public authority, a special district, an intrastate district, a council of governments, a sponsor group representative organization, and any other instrumentality of a local government.

"Officer or employee of an agency," as used in this clause, includes the following individuals who are employed by an agency:

- (1) An individual who is appointed to a position in the Government under Title 5, United States Code, including a position under a temporary appointment.
- (2) A member of the uniformed services, as defined in subsection 101(3), Title 37, United States Code.
- (3) A special Government employee, as defined in section 202, Title 18, United States Code.
- (4) An individual who is a member of a Federal advisory committee, as defined by the Federal Advisory Committee Act, Title 5, United States Code, appendix 2.

"Person," as used in this clause, means an individual, corporation, company, association, authority, firm, partnership, society, State, and local government, regardless of whether such entity is operated for profit, or not for profit. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Reasonable compensation," as used in this clause, means, with respect to a regularly employed officer or employee of any person, compensation that is consistent with the normal compensation for such officer or employee for work that is not furnished to, not funded by, or not furnished in cooperation with the Federal Government.

"Reasonable payment," as used in this clause, means, with respect to professional and other technical services, a payment in an amount that is consistent with the amount normally paid for such services in the private sector.

"Recipient," as used in this clause, includes the Contractor and all subcontractors. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Regularly employed," as used in this clause, means, with respect to an officer or employee of a person requesting or receiving a Federal contract, an officer or employee who is employed by such person for at least 130 working days within 1 year immediately preceding the date of the submission that initiates agency consideration of such person for receipt of such contract. An officer or employee who is employed by such person for less than 130 working days within 1 year immediately preceding the date of the submission that initiates agency consideration of such person shall be considered to be regularly employed as soon as he or she is employed by such person for 130 working days.

"State," as used in this clause, means a State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, a territory or possession of the United States, an agency or instrumentality of a State, and multi-State, regional, or interstate entity having governmental duties and powers.

(b) Prohibitions.

- (1) Section 1352 of Title 31, United States Code, among other things, prohibits a recipient of a Federal contract, grant, loan, or cooperative agreement from using appropriated funds to pay any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered Federal actions: the awarding of any Federal contract; the making of any Federal grant;

the making of any Federal loan; the entering into of any cooperative agreement; or the modification of any Federal contract, grant, loan, or cooperative agreement.

(2) The Act also requires Contractors to furnish a disclosure if any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a Federal contract, grant, loan, or cooperative agreement.

(3) The prohibitions of the Act do not apply under the following conditions:

(i) Agency and legislative liaison by own employees.

(A) The prohibition on the use of appropriated funds, in subparagraph (b)(1) of this clause, does not apply in the case of a payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action if the payment is for agency and legislative liaison activities not directly related to a covered Federal action.

(B) For purposes of subdivision (b)(3)(i)(A) of this clause, providing any information specifically requested by an agency or Congress is permitted at any time.

(C) The following agency and legislative liaison activities are permitted at any time where they are not related to a specific solicitation for any covered Federal action:

(1) Discussing with an agency the qualities and characteristics (including individual demonstrations) of the person's products or services, conditions or terms of sale, and service capabilities.

(2) Technical discussions and other activities regarding the application or adaptation of the person's products or services for an agency's use.

(D) The following agency and legislative liaison activities are permitted where they are prior to formal solicitation of any covered Federal action--

(1) Providing any information not specifically requested but necessary for an agency to make an informed decision about initiation of a covered Federal action;

(2) Technical discussions regarding the preparation of an unsolicited proposal prior to its official submission; and

(3) Capability presentations by persons seeking awards from an agency pursuant to the provisions of the Small Business Act, as amended by Pub. L. 95-507, and subsequent amendments.

(E) Only those services expressly authorized by subdivision (b)(3)(i)(A) of this clause are permitted under this clause.

(ii) Professional and technical services.

(A) The prohibition on the use of appropriated funds, in subparagraph (b)(1) of this clause, does not apply in the case of--

(1) A payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action, if payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action.

(2) Any reasonable payment to a person, other than an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action if the payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action. Persons other than officers or employees of a person requesting or receiving a covered Federal action include consultants and trade associations.

(B) For purposes of subdivision (b)(3)(ii)(A) of this clause, "professional and technical services" shall be limited to advice and analysis directly applying any professional or technical discipline. For example, drafting of a legal document accompanying a bid or proposal by a lawyer is allowable. Similarly, technical advice provided by an engineer on the performance or operational capability of a piece of equipment rendered directly in the negotiation of a contract is allowable. However, communications with the intent to influence made by a professional (such as a licensed lawyer) or a technical person (such as a licensed accountant) are not allowable under this section unless they provide advice and analysis directly applying their professional or technical expertise and unless the advice or analysis is rendered directly and solely in the preparation, submission or negotiation of a covered Federal action. Thus, for example, communications with the intent to influence made by a lawyer that do not provide legal advice or analysis directly and solely related to the legal aspects of his or her client's proposal, but generally advocate one proposal over another are not allowable under this section because the lawyer is not providing professional legal services. Similarly, communications with the intent to influence made by an engineer providing an engineering analysis prior to the preparation or submission of a bid or proposal are not allowable under this section since the engineer is providing technical services but not directly in the preparation, submission or negotiation of a covered Federal action.

(C) Requirements imposed by or pursuant to law as a condition for receiving a covered Federal award include those required by law or regulation and any other requirements in the actual award documents.

(D) Only those services expressly authorized by subdivisions (b)(3)(ii)(A)(1) and (2) of this clause are permitted under this clause.

(E) The reporting requirements of FAR 3.803(a) shall not apply with respect to payments of reasonable compensation made to regularly employed officers or employees of a person.

(c) Disclosure.

(1) The Contractor who requests or receives from an agency a Federal contract shall file with that agency a disclosure form, OMB standard form LLL, Disclosure of Lobbying Activities, if such person has made or has agreed to make any payment using nonappropriated funds (to include profits from any covered Federal action), which would be prohibited under subparagraph (b)(1) of this clause, if paid for with appropriated funds.

(2) The Contractor shall file a disclosure form at the end of each calendar quarter in which there occurs any event that materially affects the accuracy of the information contained in any disclosure form previously filed by such person under subparagraph (c)(1) of this clause. An event that materially affects the accuracy of the information reported includes--

(i) A cumulative increase of \$25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence a covered Federal action; or

(ii) A change in the person(s) or individual(s) influencing or attempting to influence a covered Federal action; or

(iii) A change in the officer(s), employee(s), or Member(s) contacted to influence or attempt to influence a covered Federal action.

(3) The Contractor shall require the submittal of a certification, and if required, a disclosure form by any person who requests or receives any subcontract exceeding \$100,000 under the Federal contract.

(4) All subcontractor disclosure forms (but not certifications) shall be forwarded from tier to tier until received by the prime Contractor. The prime Contractor shall submit all disclosures to the Contracting Officer at the end of the calendar quarter in which the disclosure form is submitted by the subcontractor. Each subcontractor certification shall be retained in the subcontract file of the awarding Contractor.

(d) Agreement. The Contractor agrees not to make any payment prohibited by this clause.

(e) Penalties.

(1) Any person who makes an expenditure prohibited under paragraph (a) of this clause or who fails to file or amend the disclosure form to be filed or amended by paragraph (b) of this clause shall be subject to civil penalties as provided for by 31 U.S.C. 1352. An imposition of a civil penalty does not prevent the Government from seeking any other remedy that may be applicable.

(2) Contractors may rely without liability on the representation made by their subcontractors in the certification and disclosure form.

(f) Cost allowability. Nothing in this clause makes allowable or reasonable any costs which would otherwise be unallowable or unreasonable. Conversely, costs made specifically unallowable by the requirements in this clause will not be made allowable under any other provision.

(End of clause)

#### 52.204-4 PRINTED OR COPIED DOUBLE-SIDED ON RECYCLED PAPER (AUG 2000)

(a) Definitions. As used in this clause--

“Postconsumer material” means a material or finished product that has served its intended use and has been discarded for disposal or recovery, having completed its life as a consumer item. Postconsumer material is a part of the broader category of “recovered material.” For paper and paper products, postconsumer material means “postconsumer fiber” defined by the U.S. Environmental Protection Agency (EPA) as--

(1) Paper, paperboard, and fibrous materials from retail stores, office buildings, homes, and so forth, after they have passed through their end-usage as a consumer item, including: used corrugated boxes; old newspapers; old magazines; mixed waste paper; tabulating cards; and used cordage; or

(2) All paper, paperboard, and fibrous materials that enter and are collected from municipal solid waste; but not

(3) Fiber derived from printers' over-runs, converters' scrap, and over-issue publications.

“Printed or copied double-sided” means printing or reproducing a document so that information is on both sides of a sheet of paper.

“Recovered material,” for paper and paper products, is defined by EPA in its Comprehensive Procurement Guideline as “recovered fiber” and means the following materials:

(1) Postconsumer fiber; and

(2) Manufacturing wastes such as--

(i) Dry paper and paperboard waste generated after completion of the papermaking process (that is, those manufacturing operations up to and including the cutting and trimming of the paper machine reel into smaller rolls or rough sheets) including: envelope cuttings, bindery trimmings, and other paper and paperboard waste resulting from printing, cutting, forming, and other converting operations; bag, box, and carton manufacturing wastes; and butt rolls, mill wrappers, and rejected unused stock; and

(ii) Repulped finished paper and paperboard from obsolete inventories of paper and paperboard manufacturers, merchants, wholesalers, dealers, printers, converters, or others.

(b) In accordance with Section 101 of Executive Order 13101 of September 14, 1998, Greening the Government through Waste Prevention, Recycling, and Federal Acquisition, the Contractor is encouraged to submit paper documents, such as offers, letters, or reports, that are printed or copied double-sided on recycled paper that meet minimum content standards specified in Section 505 of Executive Order 13101, when not using electronic commerce methods to submit information or data to the Government.

(c) If the Contractor cannot purchase high-speed copier paper, offset paper, forms bond, computer printout paper, carbonless paper, file folders, white wove envelopes, writing and office paper, book paper, cotton fiber paper, and cover stock meeting the 30 percent postconsumer material standard for use in submitting paper documents to the Government, it should use paper containing no less than 20 percent postconsumer material. This lesser standard should be used only when paper meeting the 30 percent postconsumer material standard is not obtainable at a reasonable price or does not meet reasonable performance standards.

(End of clause)

#### 52.214-26 Audit and Records--Sealed Bidding. (OCT 1997)

(a) As used in this clause, records includes books, documents, accounting procedures and practices, and other data, regardless of type and regardless of whether such items are in written form, in the form of computer data, or in any other form.

(b) Cost or pricing data. If the Contractor has been required to submit cost or pricing data in connection with the pricing of any modification to this contract, the Contracting Officer, or an authorized representative of the Contracting Officer, in order to evaluate the accuracy, completeness, and currency of the cost or pricing data, shall have the right to examine and audit all of the Contractor's records, including computations and projections, related to--

(1) The proposal for the modification;

(2) The discussions conducted on the proposal(s), including those related to negotiating;

(3) Pricing of the modification; or

(4) Performance of the modification.

(c) Comptroller General. In the case of pricing any modification, the Comptroller General of the United States, or an authorized representative, shall have the same rights as specified in paragraph (b) of this clause.

(d) Availability. The Contractor shall make available at its office at all reasonable times the materials described in reproduction, until 3 years after final payment under this contract, or for any other period specified in Subpart 4.7 of the Federal Acquisition Regulation (FAR). FAR Subpart 4.7, Contractor Records Retention, in effect on the date of this contract, is incorporated by reference in its entirety and made a part of this contract.



(1) If this contract is completely or partially terminated, the records relating to the work terminated shall be made available for 3 years after any resulting final termination settlement.

(2) Records pertaining to appeals under the Disputes clause or to litigation or the settlement of claims arising under or relating to the performance of this contract shall be made available until disposition of such appeals, litigation, or claims.

(e) The Contractor shall insert a clause containing all the provisions of this clause, including this paragraph (e), in all subcontracts expected to exceed the threshold in FAR 15.403-4(a)(1) for submission of cost or pricing data.

(End of clause)

52.214-27 Price Reduction for Defective Cost or Pricing Data - Modifications - Sealed Bidding. (OCT 1997)

(a) This clause shall become operative only for any modification to this contract involving aggregate increases and/or decreases in costs, plus applicable profits, expected to exceed the threshold for the submission of cost or pricing data at FAR 15.403-4(a)(1), except that this clause does not apply to a modification if an exception under FAR 15.403-1(b) applies.

(1) Based on adequate price competition;

(2) Based on established catalog or market prices of commercial items sold in substantial quantities to the general public; or

(3) Set by law or regulation.

(b) If any price, including profit, negotiated in connection with any modification under this clause, was increased by any significant amount because

(1) the Contractor or a subcontractor furnished cost or pricing data that were not complete, accurate, and current as certified in its Certificate of Current Cost or Pricing Data;

(2) a subcontractor or prospective subcontractor furnished the Contractor cost or pricing data that were not complete, accurate, and current as certified in the Contractor's Certificate of Current Cost or Pricing Data; or

(3) any of these parties furnished data of any description that were not accurate, the price shall be reduced accordingly and the contract shall be modified to reflect the reduction. This right to a price reduction is limited to that resulting from defects in data relating to modifications for which this clause becomes operative under paragraph (a) above.

(c) Any reduction in the contract price under paragraph (b) above due to defective data from a prospective subcontractor that was not subsequently awarded the subcontract shall be limited to the amount, plus applicable overhead and profit markup, by which:

(1) the actual subcontract; or

(2) the actual cost to the Contractor, if there was no subcontract, was less than the prospective subcontract cost estimate submitted by the Contractor; provided, that the actual subcontract price was not itself affected by defective cost or pricing data.

(d) If the Contracting Officer determines under paragraph (b) of this clause that a price or cost reduction should be made:

(1) the Contractor agrees not to raise the following matters as a defense:

(i) The Contractor or subcontractor was a sole source supplier or otherwise was in a superior bargaining position and thus the price of the contract would not have been modified even if accurate, complete, and current cost or pricing data had been submitted;

(ii) The Contracting Officer should have known that the cost or pricing data in issue were defective even though the Contractor or subcontractor took no affirmative action to bring the character of the data to the attention of the Contracting Officer;

(iii) The contract was based on an agreement about the total cost of the contract and there was no agreement about the cost of each item procured under the contract; or

(iv) The Contractor or subcontractor did not submit a Certificate of Current Cost or Pricing Data.

(2) Except as prohibited by subdivision (d)(2)(ii) of this clause:

(i) an offset in an amount determined appropriate by the Contracting Officer based upon the facts shall be allowed against the amount of a contract price reduction if:

(A) The Contractor certifies to the Contracting Officer that, to the best of the Contractor's knowledge and belief, the Contractor is entitled to the offset in the amount requested; and

(B) The Contractor proves that the cost or pricing data were available before the date of agreement on the price of the contract (or price of the modification) and that the data were not submitted before such date.

(ii) An offset shall not be allowed if:

(A) The understated data was known by the Contractor to be understated when the Certificate of Current Cost or Pricing Data was signed; or (B) The Government proves that the facts demonstrate that the contract price would not have increased in the amount to be offset even if the available data had been submitted before the date of agreement on price.

(e) If any reduction in the contract price under this clause reduces the price of items for which payment was made prior to the date of the modification reflecting the price reduction, the Contractor shall be liable to and shall pay the United States at the time such overpayment is repaid:

(1) Simple interest on the amount of such overpayment to be computed from the date(s) of overpayment to the Contractor to the date the Government is repaid by the Contractor at the applicable underpayment rate effective for each quarter prescribed by the Secretary of the Treasury under 26 U.S.C. 6621(a)(2); and

(2) A penalty equal to the amount of the overpayment, if the Contractor or subcontractor knowingly submitted cost or pricing data which were incomplete, inaccurate, or noncurrent.

(End of clause)

52.214-28 Subcontractor Cost or Pricing Data - Modifications - Sealed Bidding. (OCT 1997)

(a) The requirements of paragraphs (b) and (c) of this clause shall:

(1) become operative only for any modification to this contract involving aggregate increases and/or decreases in costs, plus applicable profits, expected to exceed the threshold for submission of cost or pricing data at (FAR) 48 CFR 15.403-4(a)(1); and

(2) be limited to such modifications.

(b) Before awarding any subcontract expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4(a)(1), on the date of agreement on price or the date of award, whichever is later; or before pricing any subcontract modifications involving aggregate increases and/or decreases in costs, plus applicable profits, expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4(a)(1), the Contractor shall require the subcontractor to submit cost or pricing data (actually or by specific identification in writing), unless an exception under FAR 15.403-1(b) applies.

(1) Based on adequate price competition;

(2) Based on established catalog or market prices of commercial items sold in substantial quantities to the general public; or

(3) Set by law or regulation.

(c) The Contractor shall require the subcontractor to certify in substantially the form prescribed in subsection 15.406-2 of the Federal Acquisition Regulation that, to the best of its knowledge and belief, the data submitted under paragraph (b) above were accurate, complete, and current as of the date of agreement on the negotiated price of the subcontract or subcontract modification.

(d) The Contractor shall insert the substance of this clause, including this paragraph (d), in each subcontract that, when entered into, exceeds the threshold for submission of cost or pricing data at FAR 15.403-4(a)(1).

(End of clause)

#### 52.219-8 UTILIZATION OF SMALL BUSINESS CONCERNS (OCT 2000)

(a) It is the policy of the United States that small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns shall have the maximum practicable opportunity to participate in performing contracts let by any Federal agency, including contracts and subcontracts for subsystems, assemblies, components, and related services for major systems. It is further the policy of the United States that its prime contractors establish procedures to ensure the timely payment of amounts due pursuant to the terms of their subcontracts with small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns.

(b) The Contractor hereby agrees to carry out this policy in the awarding of subcontracts to the fullest extent consistent with efficient contract performance. The Contractor further agrees to cooperate in any studies or surveys as may be conducted by the United States Small Business Administration or the awarding agency of the United States as may be necessary to determine the extent of the Contractor's compliance with this clause.

Definitions. As used in this contract--

HUBZone small business concern means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.

Service-disabled veteran-owned small business concern--

(1) Means a small business concern--

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

Small business concern means a small business as defined pursuant to Section 3 of the Small Business Act and relevant regulations promulgated pursuant thereto.

Small disadvantaged business concern means a small business concern that represents, as part of its offer that--

(1) It has received certification as a small disadvantaged business concern consistent with 13 CFR part 124, subpart B;

(2) No material change in disadvantaged ownership and control has occurred since its certification;

(3) Where the concern is owned by one or more individuals, the net worth of each individual upon whom the certification is based does not exceed \$750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and

(4) It is identified, on the date of its representation, as a certified small disadvantaged business in the database maintained by the Small Business Administration (PRO-Net).

Veteran-owned small business concern means a small business concern--

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

Women-owned small business concern means a small business concern--

(1) That is at least 51 percent owned by one or more women, or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and

(2) Whose management and daily business operations are controlled by one or more women.

(d) Contractors acting in good faith may rely on written representations by their subcontractors regarding their status as a small business concern, a veteran-owned small business concern, a service-disabled veteran-owned small business concern, a HUBZone small business concern, a small disadvantaged business concern, or a women-owned small business concern.

(End of clause)

#### 52.219-14 LIMITATIONS ON SUBCONTRACTING (DEC 1996)

(a) This clause does not apply to the unrestricted portion of a partial set-aside.

(b) By submission of an offer and execution of a contract, the Offeror/Contractor agrees that in

performance of the contract in the case of a contract for--

- (1) Services (except construction). At least 50 percent of the cost of contract performance incurred for personnel shall be expended for employees of the concern.
- (2) Supplies (other than procurement from a nonmanufacturer of such supplies). The concern shall perform work for at least 50 percent of the cost of manufacturing the supplies, not including the cost of materials.
- (3) General construction. The concern will perform at least 15 percent of the cost of the contract, not including the cost of materials, with its own employees.
- (4) Construction by special trade contractors. The concern will perform at least 25 percent of the cost of the contract, not including the cost of materials, with its own employees.

#### 52.222-3 Convict Labor (Aug 1996)

The Contractor agrees not to employ in the performance of this contract any person undergoing a sentence of imprisonment which has been imposed by any court of a State, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, or the Trust Territory of the Pacific Islands. This limitation, however, shall not prohibit the employment by the Contractor in the performance of this contract of persons on parole or probation to work at paid employment during the term of their sentence or persons who have been pardoned or who have served their terms. Nor shall it prohibit the employment by the Contractor in the performance of this contract of persons confined for violation of the laws of any of the States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, or the Trust Territory of the Pacific Islands who are authorized to work at paid employment in the community under the laws of such jurisdiction, if--

- (a)(1) The worker is paid or is in an approved work training program on a voluntary basis;
  - (2) Representatives of local union central bodies or similar labor union organizations have been consulted;
  - (3) Such paid employment will not result in the displacement of employed workers, or be applied in skills, crafts, or trades in which there is a surplus of available gainful labor in the locality, or impair existing contracts for services; and
  - (4) The rates of pay and other conditions of employment will not be less than those paid or provided for work of a similar nature in the locality in which the work is being performed; and
- (b) The Attorney General of the United States has certified that the work-release laws or regulations of the jurisdiction involved are in conformity with the requirements of Executive Order 11755, as amended by Executive Orders 12608 and 12943.

(End of clause)

#### 52.222-4 Contract Work Hours and Safety Standards Act - Overtime Compensation. (SEP 2000)

- (a) Overtime requirements. No Contractor or subcontractor employing laborers or mechanics (see Federal Acquisition Regulation 22.300) shall require or permit them to work over 40 hours in any workweek unless they are paid at least 1 and 1/2 times the basic rate of pay for each hour worked over 40 hours.
- (b) Violation; liability for unpaid wages; liquidated damages. The responsible Contractor and subcontractor are liable for unpaid wages if they violate the terms in paragraph (a) of this clause. In addition, the Contractor and subcontractor are liable for liquidated damages payable to the Government. The Contracting

Officer will assess liquidated damages at the rate of \$10 per affected employee for each calendar day on which the employer required or permitted the employee to work in excess of the standard workweek of 40 hours without paying overtime wages required by the Contract Work Hours and Safety Standards Act.

(c) Withholding for unpaid wages and liquidated damages. The Contracting Officer will withhold from payments due under the contract sufficient funds required to satisfy any Contractor or subcontractor liabilities for unpaid wages and liquidated damages. If amounts withheld under the contract are insufficient to satisfy Contractor or subcontractor liabilities, the Contracting Officer will withhold payments from other Federal or Federally assisted contracts held by the same Contractor that are subject to the Contract Work Hours and Safety Standards Act.

(d) Payrolls and basic records.

(1) The Contractor and its subcontractors shall maintain payrolls and basic payroll records for all laborers and mechanics working on the contract during the contract and shall make them available to the Government until 3 years after contract completion. The records shall contain the name and address of each employee, social security number, labor classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. The records need not duplicate those required for construction work by Department of Labor regulations at 29 CFR 5.5(a)(3) implementing the Davis-Bacon Act.

(2) The Contractor and its subcontractors shall allow authorized representatives of the Contracting Officer or the Department of Labor to inspect, copy, or transcribe records maintained under paragraph (d)(1) of this clause. The Contractor or subcontractor also shall allow authorized representatives of the Contracting Officer or Department of Labor to interview employees in the workplace during working hours.

(e) Subcontracts. The Contractor shall insert the provisions set forth in paragraphs (a) through (d) of this clause in subcontracts exceeding \$100,000 and require subcontractors to include these provisions in any lower tier subcontracts. The Contractor shall be responsible for compliance by any subcontractor or lower-tier subcontractor with the provisions set forth in paragraphs (a) through (d) of this clause.

(End of clause)

#### 52.222-6 DAVIS-BACON ACT (FEB 1995)

(a) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (d) of this clause; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such period. Such laborers and mechanics shall be paid not less than the appropriate wage rate and fringe benefits in the wage determination for the classification of work actually performed, without regard to skill, except as provided in the clause entitled Apprentices and Trainees. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein; provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph (b) of this clause) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the Contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(b)(1) The Contracting Officer shall require that any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The Contracting Officer shall approve an additional classification and wage rate and fringe benefits therefor only when all the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination.

(ii) The classification is utilized in the area by the construction industry.

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the Contracting Officer agree on the classification and wage rate (including the amount designated for fringe benefits, where appropriate), a report of the action taken shall be sent by the Contracting Officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator or an authorized representative will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.

(3) In the event the Contractor, the laborers or mechanics to be employed in the classification, or their representatives, and the Contracting Officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the Contracting Officer shall refer the questions, including the views of all interested parties and the recommendation of the Contracting Officer, to the Administrator of the Wage and Hour Division for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits, where appropriate) determined pursuant to subparagraphs (b)(2) and (b)(3) of this clause shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(c) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(1) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program; provided, That the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(End of clause)

#### 52.222-7 WITHHOLDING OF FUNDS (FEB 1988)

The Contracting Officer shall, upon his or her own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the Contractor under this contract or any other Federal contract with the same Prime Contractor, or any other Federally assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same Prime Contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers

and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the Contracting Officer may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(End of clause)

#### 52.222-8 PAYROLLS AND BASIC RECORDS (FEB 1988)

(a) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of 3 years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made, and actual wages paid. Whenever the Secretary of Labor has found, under paragraph (d) of the clause entitled Davis-Bacon Act, that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(b)(1) The Contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Contracting Officer. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under paragraph (a) of this clause. This information may be submitted in any form desired. Optional Form WH-347 (Federal Stock Number 029-005-00014-1) is available for this purpose and may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. The Prime Contractor is responsible for the submission of copies of payrolls by all subcontractors.

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify--

(i) That the payroll for the payroll period contains the information required to be maintained under paragraph (a) of this clause and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR Part 3; and

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by subparagraph (b)(2) of this clause.



(4) The falsification of any of the certifications in this clause may subject the Contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 3729 of Title 31 of the United States Code.

(c) The Contractor or subcontractor shall make the records required under paragraph (a) of this clause available for inspection, copying, or transcription by the Contracting Officer or authorized representatives of the Contracting Officer or the Department of Labor. The Contractor or subcontractor shall permit the Contracting Officer or representatives of the Contracting Officer or the Department of Labor to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit required records or to make them available, the Contracting Officer may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(End of clause)

#### 52.222-9 APPRENTICES AND TRAINEES (FEB 1988)

(a) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in this paragraph, shall be paid not less than the applicable wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(b) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full

amount of fringe benefits listed in the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate in the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate in the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate in the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(c) Equal employment opportunity. The utilization of apprentices, trainees, and journeymen under this clause shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

(End of clause)

#### 52.222-10 COMPLIANCE WITH COPELAND ACT REQUIREMENTS (FEB 1988)

The Contractor shall comply with the requirements of 29 CFR Part 3, which are hereby incorporated by reference in this contract.

(End of clause)

#### 52.222-11 SUBCONTRACTS (LABOR STANDARDS (FEB 1988)

(a) The Contractor or subcontractor shall insert in any subcontracts the clauses entitled Davis-Bacon Act, Contract Work Hours and Safety Standards Act-Overtime Compensation, Apprentices and Trainees, Payrolls and Basic Records, Compliance with Copeland Act Requirements, Withholding of Funds, Subcontracts (Labor Standards), Contract Termination-Debarment, Disputes Concerning Labor Standards, Compliance with Davis-Bacon and Related Act Regulations, and Certification of Eligibility, and such other clauses as the Contracting Officer may, by appropriate instructions, require, and also a clause requiring subcontractors to include these clauses in any lower tier subcontracts. The Prime Contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with all the contract clauses cited in this paragraph.

(b)(1) Within 14 days after award of the contract, the Contractor shall deliver to the Contracting Officer a completed Statement and Acknowledgment Form (SF 1413) for each subcontract, including the subcontractor's signed and dated acknowledgment that the clauses set forth in paragraph (a) of this clause have been included in the subcontract.

(2) Within 14 days after the award of any subsequently awarded subcontract the Contractor shall deliver to the Contracting Officer an updated completed SF 1413 for such additional subcontract.

(End of clause)

#### 52.222-12 CONTRACT TERMINATION--DEBARMENT (FEB 1988)

A breach of the contract clauses entitled Davis-Bacon Act, Contract Work Hours and Safety Standards Act-Overtime Compensation, Apprentices and Trainees, Payrolls and Basic Records, Compliance with Copeland Act Requirements, Subcontracts (Labor Standards), Compliance with Davis-Bacon and Related Act Regulations, or Certification of Eligibility may be grounds for termination of the contract, and for debarment as a Contractor and subcontractor as provided in 29 CFR 5.12.

(End of clause)

## 52.222-13 COMPLIANCE WITH DAVIS-BACON AND RELATED ACT REGULATIONS (FEB 1988)

All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are hereby incorporated by reference in this contract.

(End of clause)

## 52.222-14 DISPUTES CONCERNING LABOR STANDARDS (FEB 1988)

The United States Department of Labor has set forth in 29 CFR Parts 5, 6, and 7 procedures for resolving disputes concerning labor standards requirements. Such disputes shall be resolved in accordance with those procedures and not the Disputes clause of this contract. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

(End of clause)

## 52.222-15 CERTIFICATION OF ELIGIBILITY (FEB 1988)

(a) By entering into this contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(b) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(c) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

(End of clause)

## 52.222-26 EQUAL OPPORTUNITY (APR 2002)

(a) Definition. United States, as used in this clause, means the 50 States, the District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, the U.S. Virgin Islands, and Wake Island.

(b) If, during any 12-month period (including the 12 months preceding the award of this contract), the Contractor has been or is awarded nonexempt Federal contracts and/or subcontracts that have an aggregate value in excess of \$10,000, the Contractor shall comply with paragraphs (b)(1) through (b)(11) of this clause, except for work performed outside the United States by employees who were not recruited within the United States. Upon request, the Contractor shall provide information necessary to determine the applicability of this clause.

(1) The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. However, it shall not be a violation of this clause for the Contractor to extend a publicly announced preference in employment to Indians living on or near an Indian reservation, in connection with employment opportunities on or near an Indian reservation, as permitted by 41 CFR 60-1.5.

(2) The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. This shall include, but not be limited to, (i) employment, (ii) upgrading, (iii) demotion, (iv) transfer, (v) recruitment or recruitment advertising, (vi) layoff or termination, (vii) rates of pay or other forms of compensation, and (viii) selection for training, including apprenticeship.

- (3) The Contractor shall post in conspicuous places available to employees and applicants for employment the notices to be provided by the Contracting Officer that explain this clause.
- (4) The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.
- (5) The Contractor shall send, to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, the notice to be provided by the Contracting Officer advising the labor union or workers' representative of the Contractor's commitments under this clause, and post copies of the notice in conspicuous places available to employees and applicants for employment.
- (6) The Contractor shall comply with Executive Order 11246, as amended, and the rules, regulations, and orders of the Secretary of Labor.
- (7) The Contractor shall furnish to the contracting agency all information required by Executive Order 11246, as amended, and by the rules, regulations, and orders of the Secretary of Labor. The Contractor shall also file Standard Form 100 (EEO-1), or any successor form, as prescribed in 41 CFR part 60-1. Unless the Contractor has filed within the 12 months preceding the date of contract award, the Contractor shall, within 30 days after contract award, apply to either the regional Office of Federal Contract Compliance Programs (OFCCP) or the local office of the Equal Employment Opportunity Commission for the necessary forms.
- (8) The Contractor shall permit access to its premises, during normal business hours, by the contracting agency or the OFCCP for the purpose of conducting on-site compliance evaluations and complaint investigations. The Contractor shall permit the Government to inspect and copy any books, accounts, records (including computerized records), and other material that may be relevant to the matter under investigation and pertinent to compliance with Executive Order 11246, as amended, and rules and regulations that implement the Executive Order.
- (9) If the OFCCP determines that the Contractor is not in compliance with this clause or any rule, regulation, or order of the Secretary of Labor, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts, under the procedures authorized in Executive Order 11246, as amended. In addition, sanctions may be imposed and remedies invoked against the Contractor as provided in Executive Order 11246, as amended; in the rules, regulations, and orders of the Secretary of Labor; or as otherwise provided by law.
- (10) The Contractor shall include the terms and conditions of subparagraphs (b)(1) through (11) of this clause in every subcontract or purchase order that is not exempted by the rules, regulations, or orders of the Secretary of Labor issued under Executive Order 11246, as amended, so that these terms and conditions will be binding upon each subcontractor or vendor.
- (11) The Contractor shall take such action with respect to any subcontract or purchase order as the contracting officer may direct as a means of enforcing these terms and conditions, including sanctions for noncompliance; provided, that if the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of any direction, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.
- (c) Notwithstanding any other clause in this contract, disputes relative to this clause will be governed by the procedures in 41 CFR 60-1.1.
- (End of clause)

## 52.222-27 AFFIRMATIVE ACTION COMPLIANCE REQUIREMENTS FOR CONSTRUCTION (FEB 1999)

(a) Definitions. "Covered area," as used in this clause, means the geographical area described in the solicitation for this contract.

"Deputy Assistant Secretary," as used in this clause, means Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, or a designee.

"Employer's identification number," as used in this clause, means the Federal Social Security number used on the employer's quarterly federal tax return, U.S. Treasury Department Form 941.

"Minority," as used in this clause, means--

(1) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

(2) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands);

(3) Black (all persons having origins in any of the black African racial groups not of Hispanic origin); and

(4) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race).

(b) If the Contractor, or a subcontractor at any tier, subcontracts a portion of the work involving any construction trade, each such subcontract in excess of \$10,000 shall include this clause and the Notice containing the goals for minority and female participation stated in the solicitation for this contract.

(c) If the Contractor is participating in a Hometown Plan (41 CFR 60-4) approved by the U.S. Department of Labor in a covered area, either individually or through an association, its affirmative action obligations on all work in the plan area (including goals) shall comply with the plan for those trades that have unions participating in the plan. Contractors must be able to demonstrate participation in, and compliance with, the provisions of the plan. Each Contractor or subcontractor participating in an approved plan is also required to comply with its obligations under the Equal Opportunity clause, and to make a good faith effort to achieve each goal under the plan in each trade in which it has employees. The overall good-faith performance by other Contractors or subcontractors toward a goal in an approved plan does not excuse any Contractor's or subcontractor's failure to make good-faith efforts to achieve the plan's goals.

(d) The Contractor shall implement the affirmative action procedures in subparagraphs (g)(1) through (16) of this clause. The goals stated in the solicitation for this contract are expressed as percentages of the total hours of employment and training of minority and female utilization that the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for the geographical area where that work is actually performed. The Contractor is expected to make substantially uniform progress toward its goals in each craft.

(e) Neither the terms and conditions of any collective bargaining agreement, nor the failure by a union with which the Contractor has a collective bargaining agreement, to refer minorities or women shall excuse the Contractor's obligations under this clause, Executive Order 11246, as amended, or the regulations thereunder.

(f) In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their

training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

(g) The Contractor shall take affirmative action to ensure equal employment opportunity. The evaluation of the Contractor's compliance with this clause shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully and implement affirmative action steps at least as extensive as the following:

(1) Ensure a working environment free of harassment, intimidation, and coercion at all sites and in all facilities where the Contractor's employees are assigned to work. The Contractor, if possible, will assign two or more women to each construction project. The Contractor shall ensure that foremen, superintendents, and other onsite supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at these sites or facilities.

(2) Establish and maintain a current list of sources for minority and female recruitment. Provide written notification to minority and female recruitment sources and community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

(3) Establish and maintain a current file of the names, addresses, and telephone numbers of each minority and female off-the-street applicant, referrals of minorities or females from unions, recruitment sources, or community organizations, and the action taken with respect to each individual. If an individual was sent to the union hiring hall for referral and not referred back to the Contractor by the union or, if referred back, not employed by the Contractor, this shall be documented in the file, along with whatever additional actions the Contractor may have taken.

(4) Immediately notify the Deputy Assistant Secretary when the union or unions with which the Contractor has a collective bargaining agreement has not referred back to the Contractor a minority or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

(5) Develop on-the-job training opportunities and/or participate in training programs for the area that expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under subparagraph (g)(2) of this clause.

(6) Disseminate the Contractor's equal employment policy by--

(i) Providing notice of the policy to unions and to training, recruitment, and outreach programs, and requesting their cooperation in assisting the Contractor in meeting its contract obligations;

(ii) Including the policy in any policy manual and in collective bargaining agreements;

(iii) Publicizing the policy in the company newspaper, annual report, etc.;

(iv) Reviewing the policy with all management personnel and with all minority and female employees at least once a year; and

(v) Posting the policy on bulletin boards accessible to employees at each location where construction work is performed.

(7) Review, at least annually, the Contractor's equal employment policy and affirmative action obligations with all employees having responsibility for hiring, assignment, layoff, termination, or other employment

decisions. Conduct review of this policy with all on-site supervisory personnel before initiating construction work at a job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

(8) Disseminate the Contractor's equal employment policy externally by including it in any advertising in the news media, specifically including minority and female news media. Provide written notification to, and discuss this policy with, other Contractors and subcontractors with which the Contractor does or anticipates doing business.

(9) Direct recruitment efforts, both oral and written, to minority, female, and community organizations, to schools with minority and female students, and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than 1 month before the date for acceptance of applications for apprenticeship or training by any recruitment source, send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

(10) Encourage present minority and female employees to recruit minority persons and women. Where reasonable, provide after-school, summer, and vacation employment to minority and female youth both on the site and in other areas of the Contractor's workforce.

(11) Validate all tests and other selection requirements where required under 41 CFR 60-3.

(12) Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities. Encourage these employees to seek or to prepare for, through appropriate training, etc., opportunities for promotion.

(13) Ensure that seniority practices, job classifications, work assignments, and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment-related activities to ensure that the Contractor's obligations under this contract are being carried out.

(14) Ensure that all facilities and company activities are nonsegregated except that separate or single-user rest rooms and necessary dressing or sleeping areas shall be provided to assure privacy between the sexes.

(15) Maintain a record of solicitations for subcontracts for minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

(16) Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's equal employment policy and affirmative action obligations.

(h) The Contractor is encouraged to participate in voluntary associations that may assist in fulfilling one or more of the affirmative action obligations contained in subparagraphs (g)(1) through (16) of this clause. The efforts of a contractor association, joint contractor-union, contractor-community, or similar group of which the contractor is a member and participant may be asserted as fulfilling one or more of its obligations under subparagraphs (g)(1) through (16) of this clause, provided the Contractor--

(1) Actively participates in the group;

(2) Makes every effort to ensure that the group has a positive impact on the employment of minorities and women in the industry;

(3) Ensures that concrete benefits of the program are reflected in the Contractor's minority and female workforce participation;

(4) Makes a good-faith effort to meet its individual goals and timetables; and

(5) Can provide access to documentation that demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply is the Contractor's, and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

(i) A single goal for minorities and a separate single goal for women shall be established. The Contractor is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and nonminority. Consequently, the Contractor may be in violation of Executive Order 11246, as amended, if a particular group is employed in a substantially disparate manner.

(j) The Contractor shall not use goals or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

(k) The Contractor shall not enter into any subcontract with any person or firm debarred from Government contracts under Executive Order 11246, as amended.

(l) The Contractor shall carry out such sanctions and penalties for violation of this clause and of the Equal Opportunity clause, including suspension, termination, and cancellation of existing subcontracts, as may be imposed or ordered under Executive Order 11246, as amended, and its implementing regulations, by the OFCCP. Any failure to carry out these sanctions and penalties as ordered shall be a violation of this clause and Executive Order 11246, as amended.

(m) The Contractor in fulfilling its obligations under this clause shall implement affirmative action procedures at least as extensive as those prescribed in paragraph (g) of this clause, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of Executive Order 11246, as amended, the implementing regulations, or this clause, the Deputy Assistant Secretary shall take action as prescribed in 41 CFR 60-4.8.

(n) The Contractor shall designate a responsible official to--

(1) Monitor all employment-related activity to ensure that the Contractor's equal employment policy is being carried out;

(2) Submit reports as may be required by the Government; and

(3) Keep records that shall at least include for each employee the name, address, telephone number, construction trade, union affiliation (if any), employee identification number, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, separate records are not required to be maintained.

Nothing contained herein shall be construed as a limitation upon the application of other laws that establish different standards of compliance or upon the requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

(End of clause)

#### 52.222-35 AFFIRMATIVE ACTION FOR DISABLED VETERANS AND VETERANS OF THE VIETNAM ERA (APR 1998)

(a) ) Definitions. As used in this clause--

All employment openings includes all positions except executive and top management, those positions that will be filled from within the contractor's organization, and positions lasting 3 days or less. This term



includes full-time employment, temporary employment of more than 3 days' duration, and part-time employment.

Appropriate office of the State employment service system means the local office of the Federal-State national system of public employment offices with assigned responsibility to serve the area where the employment opening is to be filled, including the District of Columbia, Guam, the Commonwealth of Puerto Rico, and the Virgin Islands.

Positions that will be filled from within the Contractor's organization means employment openings for which no consideration will be given to persons outside the Contractor's organization (including any affiliates, subsidiaries, and parent companies) and includes any openings that the Contractor proposes to fill from regularly established "recall" lists. The exception does not apply to a particular opening once an employer decides to consider applicants outside of its organization.

Veteran of the Vietnam era means a person who--

(1) Served on active duty for a period of more than 180 days, any part of which occurred between August 5, 1964, and May 7, 1975, and was discharged or released therefrom with other than a dishonorable discharge; or

(2) Was discharged or released from active duty for a service-connected disability if any part of such active duty was performed between August 5, 1964, and May 7, 1975.

(b) General. (1) Regarding any position for which the employee or applicant for employment is qualified, the Contractor shall not discriminate against the individual because the individual is a disabled veteran or a veteran of the Vietnam era. The Contractor agrees to take affirmative action to employ, advance in employment, and otherwise treat qualified disabled veterans and veterans of the Vietnam era without discrimination based upon their disability or veterans' status in all employment practices such as--

(i) Employment;

(ii) Upgrading;

(iii) Demotion or transfer;

(iv) Recruitment;

(v) Advertising;

(vi) Layoff or termination;

(vii) Rates of pay or other forms of compensation; and

(viii) Selection for training, including apprenticeship.

(2) The Contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor (Secretary) issued under the Vietnam Era Veterans' Readjustment Assistance Act of 1972 (the Act), as amended.

(c) Listing openings. (1) The Contractor agrees to list all employment openings existing at contract award or occurring during contract performance, at an appropriate office of the State employment service system in the locality where the opening occurs. These openings include those occurring at any Contractor facility, including one not connected with performing this contract. An independent corporate affiliate is exempt from this requirement.

(2) State and local government agencies holding Federal contracts of \$10,000 or more shall also list all their employment openings with the appropriate office of the State employment service.

(3) The listing of employment openings with the State employment service system is required at least concurrently with using any other recruitment source or effort and involves the obligations of placing a bona fide job order, including accepting referrals of veterans and nonveterans. This listing does not require hiring any particular job applicant or hiring from any particular group of job applicants and is not intended to relieve the Contractor from any requirements of Executive orders or regulations concerning nondiscrimination in employment.

(4) Whenever the Contractor becomes contractually bound to the listing terms of this clause, it shall advise the State employment service system, in each State where it has establishments, of the name and location of each hiring location in the State. As long as the Contractor is contractually bound to these terms and has so advised the State system, it need not advise the State system of subsequent contracts. The Contractor may advise the State system when it is no longer bound by this contract clause.

(d) Applicability. This clause does not apply to the listing of employment openings that occur and are filled outside the 50 States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, and the Virgin Islands.

(e) Postings. (1) The Contractor agrees to post employment notices stating (i) the Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified disabled veterans and veterans of the Vietnam era, and (ii) the rights of applicants and employees.

(2) These notices shall be posted in conspicuous places that are available to employees and applicants for employment. They shall be in a form prescribed by the Deputy Assistant Secretary for Federal Contract Compliance Programs, Department of Labor (Deputy Assistant Secretary), and provided by or through the Contracting Officer.

(3) The Contractor shall notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the Contractor is bound by the terms of the Act, and is committed to take affirmative action to employ, and advance in employment, qualified disabled veterans and veterans of the Vietnam Era.

(f) Noncompliance. If the Contractor does not comply with the requirements of this clause, appropriate actions may be taken under the rules, regulations, and relevant orders of the Secretary issued pursuant to the Act.

(g) Subcontracts. The Contractor shall include the terms of this clause in every subcontract or purchase order of \$10,000 or more unless exempted by rules, regulations, or orders of the Secretary. The Contractor shall act as specified by the Deputy Assistant Secretary to enforce the terms, including action for noncompliance.

(End of clause)

#### 52.222-36 AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES (JUN 1998)

(a) General. (1) Regarding any position for which the employee or applicant for employment is qualified, the Contractor shall not discriminate against any employee or applicant because of physical or mental disability. The Contractor agrees to take affirmative action to employ, advance in employment, and otherwise treat qualified individuals with disabilities without discrimination based upon their physical or mental disability in all employment practices such as--

(i) Recruitment, advertising, and job application procedures;

(ii) Hiring, upgrading, promotion, award of tenure, demotion, transfer, layoff, termination, right of return from layoff, and rehiring;

(iii) Rates of pay or any other form of compensation and changes in compensation;

(iv) Job assignments, job classifications, organizational structures, position descriptions, lines of progression, and seniority lists;

(v) Leaves of absence, sick leave, or any other leave;

(vi) Fringe benefits available by virtue of employment, whether or not administered by the Contractor;

(vii) Selection and financial support for training, including apprenticeships, professional meetings, conferences, and other related activities, and selection for leaves of absence to pursue training;

(viii) Activities sponsored by the Contractor, including social or recreational programs; and

(ix) Any other term, condition, or privilege of employment.

(2) The Contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor (Secretary) issued under the Rehabilitation Act of 1973 (29 U.S.C. 793) (the Act), as amended.

(b) Postings. (1) The Contractor agrees to post employment notices stating--

(i) The Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified individuals with disabilities; and

(ii) The rights of applicants and employees.

(2) These notices shall be posted in conspicuous places that are available to employees and applicants for employment. The Contractor shall ensure that applicants and employees with disabilities are informed of the contents of the notice (e.g., the Contractor may have the notice read to a visually disabled individual, or may lower the posted notice so that it might be read by a person in a wheelchair). The notices shall be in a form prescribed by the Deputy Assistant Secretary for Federal Contract Compliance of the U.S. Department of Labor (Deputy Assistant Secretary) and shall be provided by or through the Contracting Officer.

(3) The Contractor shall notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the Contractor is bound by the terms of Section 503 of the Act and is committed to take affirmative action to employ, and advance in employment, qualified individuals with physical or mental disabilities.

(c) Noncompliance. If the Contractor does not comply with the requirements of this clause, appropriate actions may be taken under the rules, regulations, and relevant orders of the Secretary issued pursuant to the Act.

(d) Subcontracts. The Contractor shall include the terms of this clause in every subcontract or purchase order in excess of \$10,000 unless exempted by rules, regulations, or orders of the Secretary. The Contractor shall act as specified by the Deputy Assistant Secretary to enforce the terms, including action for noncompliance.

(End of clause)

**52.222-37 EMPLOYMENT REPORTS ON DISABLED VETERANS AND VETERANS OF THE VIETNAM ERA (JAN 1999)**

(a) Unless the Contractor is a State or local government agency, the Contractor shall report at least annually, as required by the Secretary of Labor, on--

(1) The number of disabled veterans and the number of veterans of the Vietnam era in the workforce of the contractor by job category and hiring location; and

(2) The total number of new employees hired during the period covered by the report, and of that total, the number of disabled veterans, and the number of veterans of the Vietnam era.

(b) The above items shall be reported by completing the form entitled "Federal Contractor Veterans' Employment Report VETS-100."

(c) Reports shall be submitted no later than September 30 of each year beginning September 30, 1988.

(d) The employment activity report required by paragraph (a)(2) of this clause shall reflect total hires during the most recent 12-month period as of the ending date selected for the employment profile report required by paragraph (a)(1) of this clause. Contractors may select an ending date: (1) As of the end of any pay period during the period January through March 1st of the year the report is due, or (2) as of December 31, if the contractor has previous written approval from the Equal Employment Opportunity Commission to do so for purposes of submitting the Employer Information Report EEO-1 (Standard Form 100).

(e) The count of veterans reported according to paragraph (a) of this clause shall be based on voluntary disclosure. Each Contractor subject to the reporting requirements at 38 U.S.C. 4212 shall invite all disabled veterans and veterans of the Vietnam era who wish to benefit under the affirmative action program at 38 U.S.C. 4212 to identify themselves to the Contractor. The invitation shall state that the information is voluntarily provided; that the information will be kept confidential; that disclosure or refusal to provide the information will not subject the applicant or employee to any adverse treatment; and that the information will be used only in accordance with the regulations promulgated under 38 U.S.C. 4212.

(f) Subcontracts. The Contractor shall include the terms of this clause in every subcontract or purchase order of \$10,000 or more unless exempted by rules, regulations, or orders of the Secretary.

(End of clause)

**52.222-38 COMPLIANCE WITH VETERANS' EMPLOYMENT REPORTING REQUIREMENTS (DEC 2001)**

By submission of its offer, the offeror represents that, if it is subject to the reporting requirements of 38 U.S.C. 4212(d) (i.e., if it has any contract containing Federal Acquisition Regulation clause 52.222-37, Employment Reports on Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans), it has submitted the most recent VETS-100 Report required by that clause.

(End of provision)

**52.223-5 POLLUTION PREVENTION AND RIGHT-TO-KNOW INFORMATION (APR 1998)**

(a) Executive Order 12856 of August 3, 1993, requires Federal facilities to comply with the provisions of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA)(42 U.S.C. 11001-11050) and the Pollution Prevention Act of 1990 (PPA)(42 U.S.C. 13101-13109).

(b) The Contractor shall provide all information needed by the Federal facility to comply with the emergency planning reporting requirements of Section 302 of EPCRA; the emergency notice requirements of Section 304 of EPCRA; the list of Material Safety Data Sheets required by Section 311 of EPCRA; the

emergency and hazardous chemical inventory forms of Section 312 of EPCRA; the toxic chemical release inventory of Section 313 of EPCRA, which includes the reduction and recycling information required by Section 6607 of PPA; and the toxic chemical reduction goals requirements of Section 3-302 of Executive Order 12856.

(End of clause)

#### 52.223-6 DRUG-FREE WORKPLACE (MAY 2001)

(a) Definitions. As used in this clause --

"Controlled substance" means a controlled substance in schedules I through V of section 202 of the Controlled Substances Act (21 U.S.C. 812) and as further defined in regulation at 21 CFR 1308.11 - 1308.15.

"Conviction" means a finding of guilt (including a plea of nolo contendere) or imposition of sentence, or both, by any judicial body charged with the responsibility to deter- mine violations of the Federal or State criminal drug statutes.

"Criminal drug statute" means a Federal or non-Federal criminal statute involving the manufacture, distribution, dispensing, possession, or use of any controlled substance.

"Drug-free workplace" means the site(s) for the performance of work done by the Contractor in connection with a specific contract at which employees of the Contractor are prohibited from engaging in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance.

"Employee" means an employee of a Contractor directly engaged in the performance of work under a Government contract. "Directly engaged" is defined to include all direct cost employees and any other Contractor employee who has other than a minimal impact or involvement in contract performance.

"Individual" means an offeror/contractor that has no more than one employee including the offeror/contractor.

(b) The Contractor, if other than an individual, shall-- within 30 days after award (unless a longer period is agreed to in writing for contracts of 30 days or more performance duration), or as soon as possible for contracts of less than 30 days performance duration--

(1) Publish a statement notifying its employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the Contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition;

(2) Establish an ongoing drug-free awareness program to inform such employees about--

(i) The dangers of drug abuse in the workplace;

(ii) The Contractor's policy of maintaining a drug-free workplace;

(iii) Any available drug counseling, rehabilitation, and employee assistance programs; and

(iv) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(3) Provide all employees engaged in performance of the contract with a copy of the statement required by subparagraph (b)(1) of this clause;

(4) Notify such employees in writing in the statement required by subparagraph (b)(1) of this clause that, as

a condition of continued employment on this contract, the employee will--

(i) Abide by the terms of the statement; and

(ii) Notify the employer in writing of the employee's conviction under a criminal drug statute for a violation occurring in the workplace no later than 5 days after such conviction.

(5) Notify the Contracting Officer in writing within 10 days after receiving notice under subdivision (b)(4)(ii) of this clause, from an employee or otherwise receiving actual notice of such conviction. The notice shall include the position title of the employee;

(6) Within 30 days after receiving notice under subdivision (b)(4)(ii) of this clause of a conviction, take one of the following actions with respect to any employee who is convicted of a drug abuse violation occurring in the workplace:

(i) Taking appropriate personnel action against such employee, up to and including termination; or

(ii) Require such employee to satisfactorily participate in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency; and

(7) Make a good faith effort to maintain a drug-free workplace through implementation of subparagraphs (b)(1) through (b)(6) of this clause.

(c) The Contractor, if an individual, agrees by award of the contract or acceptance of a purchase order, not to engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance while performing this contract.

(d) In addition to other remedies available to the Government, the Contractor's failure to comply with the requirements of paragraph (b) or (c) of this clause may, pursuant to FAR 23.506, render the Contractor subject to suspension of contract payments, termination of the contract for default, and suspension or debarment.

(End of clause)

#### 52.223-14 TOXIC CHEMICAL RELEASE REPORTING (OCT 2000)

(a) Unless otherwise exempt, the Contractor, as owner or operator of a facility used in the performance of this contract, shall file by July 1 for the prior calendar year an annual Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023(a) and (g)), and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106). The Contractor shall file, for each facility subject to the Form R filing and reporting requirements, the annual Form R throughout the life of the contract.

(b) A Contractor owned or operated facility used in the performance of this contract is exempt from the requirement to file an annual Form R if--

(1) The facility does not manufacture, process, or otherwise use any toxic chemicals listed under section 313(c) of EPCRA, 42 U.S.C. 11023(c);

(2) The facility does not have 10 or more full-time employees as specified in section 313(b)(1)(A) of EPCRA, 42 U.S.C. 11023(b)(1)(A);

(3) The facility does not meet the reporting thresholds of toxic chemicals established under of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);

(4) The facility does not fall within Standard Industrial Classification Code (SIC) major groups 20 through 39 or their corresponding North American Industry Classification System (NAICS) sectors 31 through 33; or

(5) The facility is not located within any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Northern Mariana Islands, or any other territory or possession over which the United States has jurisdiction.

(c) If the Contractor has certified to an exemption in accordance with one or more of the criteria in paragraph (b) of this clause, and after award of the contract circumstances change so that any of its owned or operated facilities used in the performance of this contract is no longer exempt--

(1) The Contractor shall notify the Contracting Officer; and

(2) The Contractor, as owner or operator of a facility used in the performance of this contract that is no longer exempt, shall (i) submit a Toxic Chemical Release Inventory Form (Form R) on or before July 1 for the prior calendar year during which the facility becomes eligible; and (ii) continue to file the annual Form R for the life of the contract for such facility.

(d) The Contracting Officer may terminate this contract or take other action as appropriate, if the Contractor fails to comply accurately and fully with the EPCRA and PPA toxic chemical release filing and reporting requirements.

(e) Except for acquisitions of commercial items, as defined in FAR Part 2, the Contractor shall--

(1) For competitive subcontracts expected to exceed \$100,000 (including all options), include a solicitation provision substantially the same as the provision at FAR 52.223-13, Certification of Toxic Chemical Release Reporting; and

(2) Include in any resultant subcontract exceeding \$100,000 (including all options), the substance of this clause, except this paragraph (e).

(End of clause)

#### 52.225-13 RESTRICTIONS ON CERTAIN FOREIGN PURCHASES (JUL 2000)

(a) The Contractor shall not acquire, for use in the performance of this contract, any supplies or services originating from sources within, or that were located in or transported from or through, countries whose products are banned from importation into the United States under regulations of the Office of Foreign Assets Control, Department of the Treasury. Those countries are Cuba, Iran, Iraq, Libya, North Korea, Sudan, the territory of Afghanistan controlled by the Taliban, and Serbia (excluding the territory of Kosovo).

(b) The Contractor shall not acquire for use in the performance of this contract any supplies or services from entities controlled by the government of Iraq.

(c) The Contractor shall insert this clause, including this paragraph (c), in all subcontracts.

(End of clause)

#### 52.225-14 INCONSISTENCY BETWEEN ENGLISH VERSION AND TRANSLATION OF CONTRACT (FEB 2000)

In the event of inconsistency between any terms of this contract and any translation into another language, the English language meaning shall control.

(End of clause)

## 52.227-1 Authorization and Consent (JUL 1995)

(a) The Government authorizes and consents to all use and manufacture, in performing this contract or any subcontract at any tier, of any invention described in and covered by a United States patent (1) embodied in the structure or composition of any article the delivery of which is accepted by the Government under this contract or (2) used in machinery, tools, or methods whose use necessarily results from compliance by the Contractor or a subcontractor with (i) specifications or written provisions forming a part of this contract or (ii) specific written instructions given by the Contracting Officer directing the manner of performance. The entire liability to the Government for infringement of a patent of the United States shall be determined solely by the provisions of the indemnity clause, if any, included in this contract or any subcontract hereunder (including any lower-tier subcontract), and the Government assumes liability for all other infringement to the extent of the authorization and consent hereinabove granted.

(b) The Contractor agrees to include, and require inclusion of, this clause, suitably modified to identify the parties, in all subcontracts at any tier for supplies or services (including construction, architect-engineer services, and materials, supplies, models, samples, and design or testing services expected to exceed the simplified acquisition threshold (however, omission of this clause from any subcontract, including those at or below the simplified acquisition threshold, does not affect this authorization and consent.)

(End of clause)

## 52.227-2 NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT (AUG 1996)

(a) The Contractor shall report to the Contracting Officer, promptly and in reasonable written detail, each notice or claim of patent or copyright infringement based on the performance of this contract of which the Contractor has knowledge.

(b) In the event of any claim or suit against the Government on account of any alleged patent or copyright infringement arising out of the performance of this contract or out of the use of any supplies furnished or work or services performed under this contract, the Contractor shall furnish to the Government, when requested by the Contracting Officer, all evidence and information in possession of the Contractor pertaining to such suit or claim. Such evidence and information shall be furnished at the expense of the Government except where the Contractor has agreed to indemnify the Government.

(2) The Contractor agrees to include, and require inclusion of, this clause in all subcontracts at any tier for supplies or services (including construction and architect-engineer subcontracts and those for material, supplies, models, samples, or design or testing services) expected to exceed the simplified acquisition threshold at (FAR) 2.101 to exceed the dollar amount set forth in 13.000 of the Federal Acquisition Regulation (FAR).

(End of clause)

## 52.227-4 PATENT INDEMNITY--CONSTRUCTION CONTRACTS (APR 1984)

Except as otherwise provided, the Contractor agrees to indemnify the Government and its officers, agents, and employees against liability, including costs and expenses, for infringement upon any United States patent (except a patent issued upon an application that is now or may hereafter be withheld from issue pursuant to a Secrecy Order under 35 U.S.C. 181) arising out of performing this contract or out of the use or disposal by or for the account of the Government of supplies furnished or work performed under this contract.

(End of clause)



## 52.228-2 ADDITIONAL BOND SECURITY (OCT 1997)

The Contractor shall promptly furnish additional security required to protect the Government and persons supplying labor or materials under this contract if--

- (a) Any surety upon any bond, or issuing financial institution for other security, furnished with this contract becomes unacceptable to the Government.
- (b) Any surety fails to furnish reports on its financial condition as required by the Government;
- (c) The contract price is increased so that the penal sum of any bond becomes inadequate in the opinion of the Contracting Officer; or
- (d) An irrevocable letter of credit (ILC) used as security will expire before the end of the period of required security. If the Contractor does not furnish an acceptable extension or replacement ILC, or other acceptable substitute, at least 30 days before an ILC's scheduled expiration, the Contracting officer has the right to immediately draw on the ILC.

(End of clause)

## 52.228-11 PLEDGES OF ASSETS (FEB 1992)

(a) Offerors shall obtain from each person acting as an individual surety on a bid guarantee, a performance bond, or a payment bond--

(1) Pledge of assets; and

(2) Standard Form 28, Affidavit of Individual Surety.

(b) Pledges of assets from each person acting as an individual surety shall be in the form of--

(1) Evidence of an escrow account containing cash, certificates of deposit, commercial or Government securities, or other assets described in FAR 28.203-2 (except see 28.203-2(b)(2) with respect to Government securities held in book entry form) and/or;

(2) A recorded lien on real estate. The offeror will be required to provide--

(i) Evidence of title in the form of a certificate of title prepared by a title insurance company approved by the United States Department of Justice. This title evidence must show fee simple title vested in the surety along with any concurrent owners; whether any real estate taxes are due and payable; and any recorded encumbrances against the property, including the lien filed in favor of the Government as required by FAR 28.203-3(d);

(ii) Evidence of the amount due under any encumbrance shown in the evidence of title;

(iii) A copy of the current real estate tax assessment of the property or a current appraisal dated no earlier than 6 months prior to the date of the bond, prepared by a professional appraiser who certifies that the appraisal has been conducted in accordance with the generally accepted appraisal standards as reflected in the Uniform Standards of Professional Appraisal Practice, as promulgated by the Appraisal Foundation.

(End of clause)

## 52.229-3 FEDERAL, STATE, AND LOCAL TAXES (JAN 1991)

(a) "Contract date," as used in this clause, means the date set for bid opening or, if this is a negotiated contract or a modification, the effective date of this contract or modification.

"All applicable Federal, State, and local taxes and duties," as used in this clause, means all taxes and duties, in effect on the contract date, that the taxing authority is imposing and collecting on the transactions or property covered by this contract.

"After-imposed Federal tax," as used in this clause, means any new or increased Federal excise tax or duty, or tax that was exempted or excluded on the contract date but whose exemption was later revoked or reduced during the contract period, on the transactions or property covered by this contract that the Contractor is required to pay or bear as the result of legislative, judicial, or administrative action taking effect after the contract date. It does not include social security tax or other employment taxes.

"After-relieved Federal tax," as used in this clause, means any amount of Federal excise tax or duty, except social security or other employment taxes, that would otherwise have been payable on the transactions or property covered by this contract, but which the Contractor is not required to pay or bear, or for which the Contractor obtains a refund or drawback, as the result of legislative, judicial, or administrative action taking effect after the contract date.

(b) The contract price includes all applicable Federal, State, and local taxes and duties.

(c) The contract price shall be increased by the amount of any after-imposed Federal tax, provided the Contractor warrants in writing that no amount for such newly imposed Federal excise tax or duty or rate increase was included in the contract price, as a contingency reserve or otherwise.

(d) The contract price shall be decreased by the amount of any after-relieved Federal tax.

(e) The contract price shall be decreased by the amount of any Federal excise tax or duty, except social security or other employment taxes, that the Contractor is required to pay or bear, or does not obtain a refund of, through the Contractor's fault, negligence, or failure to follow instructions of the Contracting Officer.

(f) No adjustment shall be made in the contract price under this clause unless the amount of the adjustment exceeds \$250.

(g) The Contractor shall promptly notify the Contracting Officer of all matters relating to any Federal excise tax or duty that reasonably may be expected to result in either an increase or decrease in the contract price and shall take appropriate action as the Contracting Officer directs.

(h) The Government shall, without liability, furnish evidence appropriate to establish exemption from any Federal, State, or local tax when the Contractor requests such evidence and a reasonable basis exists to sustain the exemption.

(End of clause)

#### 52.232-5 PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS (MAY 1997)

(a) Payment of price. The Government shall pay the Contractor the contract price as provided in this contract.

(b) Progress payments. The Government shall make progress payments monthly as the work proceeds, or at more frequent intervals as determined by the Contracting Officer, on estimates of work accomplished which meets the standards of quality established under the contract, as approved by the Contracting Officer.

(1) The Contractor's request for progress payments shall include the following substantiation:

(i) An itemization of the amounts requested, related to the various elements of work required by the contract covered by the payment requested.

- (ii) A listing of the amount included for work performed by each subcontractor under the contract.
  - (iii) A listing of the total amount of each subcontract under the contract.
  - (iv) A listing of the amounts previously paid to each such subcontractor under the contract.
  - (v) Additional supporting data in a form and detail required by the Contracting Officer.
- (2) In the preparation of estimates, the Contracting Officer may authorize material delivered on the site and preparatory work done to be taken into consideration. Material delivered to the Contractor at locations other than the site also may be taken into consideration if--
- (i) Consideration is specifically authorized by this contract; and
  - (ii) The Contractor furnishes satisfactory evidence that it has acquired title to such material and that the material will be used to perform this contract.
- (c) Contractor certification. Along with each request for progress payments, the Contractor shall furnish the following certification, or payment shall not be made: (However, if the Contractor elects to delete paragraph (c)(4) from the certification, the certification is still acceptable.)

I hereby certify, to the best of my knowledge and belief, that--

- (1) The amounts requested are only for performance in accordance with the specifications, terms, and conditions of the contract;
- (2) Payments to subcontractors and suppliers have been made from previous payments received under the contract, and timely payments will be made from the proceeds of the payment covered by this certification, in accordance with subcontract agreements and the requirements of chapter 39 of Title 31, United States Code;
- (3) This request for progress payments does not include any amounts which the prime contractor intends to withhold or retain from a subcontractor or supplier in accordance with the terms and conditions of the subcontract; and
- (4) This certification is not to be construed as final acceptance of a subcontractor's performance.

\_\_\_\_\_

(Name)

\_\_\_\_\_

(Title)

\_\_\_\_\_

(Date)

(d) Refund of unearned amounts. If the Contractor, after making a certified request for progress payments, discovers that a portion or all of such request constitutes a payment for performance by the Contractor that fails to conform to the specifications, terms, and conditions of this contract (hereinafter referred to as the "unearned amount"), the Contractor shall--

- (1) Notify the Contracting Officer of such performance deficiency; and

(2) Be obligated to pay the Government an amount (computed by the Contracting Officer in the manner provided in paragraph (j) of this clause) equal to interest on the unearned amount from the 8th day after the date of receipt of the unearned amount until--

(i) The date the Contractor notifies the Contracting Officer that the performance deficiency has been corrected; or

(ii) The date the Contractor reduces the amount of any subsequent certified request for progress payments by an amount equal to the unearned amount.

(e) Retainage. If the Contracting Officer finds that satisfactory progress was achieved during any period for which a progress payment is to be made, the Contracting Officer shall authorize payment to be made in full. However, if satisfactory progress has not been made, the Contracting Officer may retain a maximum of 10 percent of the amount of the payment until satisfactory progress is achieved. When the work is substantially complete, the Contracting Officer may retain from previously withheld funds and future progress payments that amount the Contracting Officer considers adequate for protection of the Government and shall release to the Contractor all the remaining withheld funds. Also, on completion and acceptance of each separate building, public work, or other division of the contract, for which the price is stated separately in the contract, payment shall be made for the completed work without retention of a percentage.

(f) Title, liability, and reservation of rights. All material and work covered by progress payments made shall, at the time of payment, become the sole property of the Government, but this shall not be construed as--

(1) Relieving the Contractor from the sole responsibility for all material and work upon which payments have been made or the restoration of any damaged work; or

(2) Waiving the right of the Government to require the fulfillment of all of the terms of the contract.

(g) Reimbursement for bond premiums. In making these progress payments, the Government shall, upon request, reimburse the Contractor for the amount of premiums paid for performance and payment bonds (including coinsurance and reinsurance agreements, when applicable) after the Contractor has furnished evidence of full payment to the surety. The retainage provisions in paragraph (e) of this clause shall not apply to that portion of progress payments attributable to bond premiums.

(h) Final payment. The Government shall pay the amount due the Contractor under this contract after--

(1) Completion and acceptance of all work;

(2) Presentation of a properly executed voucher; and

(3) Presentation of release of all claims against the Government arising by virtue of this contract, other than claims, in stated amounts, that the Contractor has specifically excepted from the operation of the release. A release may also be required of the assignee if the Contractor's claim to amounts payable under this contract has been assigned under the Assignment of Claims Act of 1940 (31 U.S.C. 3727 and 41 U.S.C. 15).

(i) Limitation because of undefinitized work. Notwithstanding any provision of this contract, progress payments shall not exceed 80 percent on work accomplished on undefinitized contract actions. A "contract action" is any action resulting in a contract, as defined in FAR Subpart 2.1, including contract modifications for additional supplies or services, but not including contract modifications that are within the scope and under the terms of the contract, such as contract modifications issued pursuant to the Changes clause, or funding and other administrative changes.

(j) Interest computation on unearned amounts. In accordance with 31 U.S.C. 3903(c)(1), the amount

payable under subparagraph (d)(2) of this clause shall be--

(1) Computed at the rate of average bond equivalent rates of 91-day Treasury bills auctioned at the most recent auction of such bills prior to the date the Contractor receives the unearned amount; and

(2) Deducted from the next available payment to the Contractor.

(End of clause)

#### 52.232-17 INTEREST (JUNE 1996)

(a) Except as otherwise provided in this contract under a Price Reduction for Defective Cost or Pricing Data clause or a Cost Accounting Standards clause, all amounts that become payable by the Contractor to the Government under this contract (net of any applicable tax credit under the Internal Revenue Code (26 U.S.C. 1481)) shall bear simple interest from the date due until paid unless paid within 30 days of becoming due. The interest rate shall be the interest rate established by the Secretary of the Treasury as provided in Section 12 of the Contract Disputes Act of 1978 (Public Law 95-563), which is applicable to the period in which the amount becomes due, as provided in paragraph (b) of this clause, and then at the rate applicable for each six-month period as fixed by the Secretary until the amount is paid. reproduce, prepare derivative works, distribute copies to the public, and (b) Amounts shall be due at the earliest of the following dates:

(1) The date fixed under this contract.

(2) The date of the first written demand for payment consistent with this contract, including any demand resulting from a default termination.

(3) The date the Government transmits to the Contractor a proposed supplemental agreement to confirm completed negotiations establishing the amount of debt.

(4) If this contract provides for revision of prices, the date of written notice to the Contractor stating the amount of refund payable in connection with a pricing proposal or a negotiated pricing agreement not confirmed by contract modification.

(c) The interest charge made under this clause may be reduced under the procedures prescribed in 32.614-2 of the Federal Acquisition Regulation in effect on the date of this contract.

(End of clause)

#### 52.232-23 ASSIGNMENT OF CLAIMS (JAN 1986)

(a) The Contractor, under the Assignment of Claims Act, as amended, 31 U.S.C. 3727, 41 U.S.C. 15 (hereafter referred to as "the Act"), may assign its rights to be paid amounts due or to become due as a result of the performance of this contract to a bank, trust company, or other financing institution, including any Federal lending agency. The assignee under such an assignment may thereafter further assign or reassign its right under the original assignment to any type of financing institution described in the preceding sentence.

(b) Any assignment or reassignment authorized under the Act and this clause shall cover all unpaid amounts payable under this contract, and shall not be made to more than one party, except that an assignment or reassignment may be made to one party as agent or trustee for two or more parties participating in the financing of this contract.

(c) The Contractor shall not furnish or disclose to any assignee under this contract any classified document (including this contract) or information related to work under this contract until the Contracting Officer authorizes such action in writing.

## 52.232-27 PROMPT PAYMENT FOR CONSTRUCTION CONTRACTS (FEB 2002)

Notwithstanding any other payment terms in this contract, the Government will make invoice payments under the terms and conditions specified in this clause. The Government considers payment as being made on the day a check is dated or the date of an electronic funds transfer. Definitions of pertinent terms are set forth in sections 2.101, 32.001, and 32.902 of the Federal Acquisition Regulation. All days referred to in this clause are calendar days, unless otherwise specified. (However, see paragraph (a)(3) concerning payments due on Saturdays, Sundays, and legal holidays.)

(a) Invoice payments--(1) Types of invoice payments. For purposes of this clause, there are several types of invoice payments that may occur under this contract, as follows:

(i) Progress payments, if provided for elsewhere in this contract, based on Contracting Officer approval of the estimated amount and value of work or services performed, including payments for reaching milestones in any project.

(A) The due date for making such payments is 14 days after the designated billing office receives a proper payment request. If the designated billing office fails to annotate the payment request with the actual date of receipt at the time of receipt, the payment due date is the 14th day after the date of the Contractor's payment request, provided the designated billing office receives a proper payment request and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(B) The due date for payment of any amounts retained by the Contracting Officer in accordance with the clause at 52.232-5, Payments Under Fixed-Price Construction Contracts, is as specified in the contract or, if not specified, 30 days after approval by the Contracting Officer for release to the Contractor.

(ii) Final payments based on completion and acceptance of all work and presentation of release of all claims against the Government arising by virtue of the contract, and payments for partial deliveries that have been accepted by the Government (e.g., each separate building, public work, or other division of the contract for which the price is stated separately in the contract).

(A) The due date for making such payments is the later of the following two events:

(1) The 30th day after the designated billing office receives a proper invoice from the Contractor.

(2) The 30th day after Government acceptance of the work or services completed by the Contractor. For a final invoice when the payment amount is subject to contract settlement actions (e.g., release of claims), acceptance is deemed to occur on the effective date of the contract settlement.

(B) If the designated billing office fails to annotate the invoice with the date of actual receipt at the time of receipt, the invoice payment due date is the 30th day after the date of the Contractor's invoice, provided the designated billing office receives a proper invoice and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(2) Contractor's invoice. The Contractor shall prepare and submit invoices to the designated billing office specified in the contract. A proper invoice must include the items listed in paragraphs (a)(2)(i) through (a)(2)(xi) of this clause. If the invoice does not comply with these requirements, the designated billing office must return it within 7 days after receipt, with the reasons why it is not a proper invoice. When computing any interest penalty owed the Contractor, the Government will take into account if the Government notifies the Contractor of an improper invoice in an untimely manner.

(i) Name and address of the Contractor.

(ii) Invoice date and invoice number. (The Contractor should date invoices as close as possible to the date of mailing or transmission.)

(iii) Contract number or other authorization for work or services performed (including order number and contract line item number).

(iv) Description of work or services performed.

(v) Delivery and payment terms (e.g., discount for prompt payment terms).

(vi) Name and address of Contractor official to whom payment is to be sent (must be the same as that in the contract or in a proper notice of assignment).

(vii) Name (where practicable), title, phone number, and mailing address of person to notify in the event of a defective invoice.

(viii) For payments described in paragraph (a)(1)(i) of this clause, substantiation of the amounts requested and certification in accordance with the requirements of the clause at 52.232-5, Payments Under Fixed-Price Construction Contracts.

(ix) Taxpayer Identification Number (TIN). The Contractor shall include its TIN on the invoice only if required elsewhere in this contract.

(x) Electronic funds transfer (EFT) banking information.

(A) The Contractor shall include EFT banking information on the invoice only if required elsewhere in this contract.

(B) If EFT banking information is not required to be on the invoice, in order for the invoice to be a proper invoice, the Contractor shall have submitted correct EFT banking information in accordance with the applicable solicitation provision (e.g., 52.232-38, Submission of Electronic Funds Transfer Information with Offer), contract clause (e.g., 52.232-33, Payment by Electronic Funds Transfer--Central Contractor Registration, or 52.232-34, Payment by Electronic Funds Transfer--Other Than Central Contractor Registration), or applicable agency procedures.

(C) EFT banking information is not required if the Government waived the requirement to pay by EFT.

(xi) Any other information or documentation required by the contract.

(3) Interest penalty. The designated payment office will pay an interest penalty automatically, without request from the Contractor, if payment is not made by the due date and the conditions listed in paragraphs (a)(3)(i) through (a)(3)(iii) of this clause are met, if applicable. However, when the due date falls on a Saturday, Sunday, or legal holiday, the designated payment office may make payment on the following working day without incurring a late payment interest penalty.

(i) The designated billing office received a proper invoice.

(ii) The Government processed a receiving report or other Government documentation authorizing payment and there was no disagreement over quantity, quality, Contractor compliance with any contract term or condition, or requested progress payment amount.

(iii) In the case of a final invoice for any balance of funds due the Contractor for work or services performed, the amount was not subject to further contract settlement actions between the Government and the Contractor.

(4) Computing penalty amount. The Government will compute the interest penalty in accordance with the Office of Management and Budget prompt payment regulations at 5 CFR part 1315.

(i) For the sole purpose of computing an interest penalty that might be due the Contractor for payments described in paragraph (a)(1)(ii) of this clause, Government acceptance or approval is deemed to occur constructively on the 7th day after the Contractor has completed the work or services in accordance with the terms and conditions of the contract. If actual acceptance or approval occurs within the constructive acceptance or approval period, the Government will base the determination of an interest penalty on the actual date of acceptance or approval. Constructive acceptance or constructive approval requirements do not apply if there is a disagreement over quantity, quality, or Contractor compliance with a contract provision. These requirements also do not compel Government officials to accept work or services, approve Contractor estimates, perform contract administration functions, or make payment prior to fulfilling their responsibilities.

(ii) The prompt payment regulations at 5 CFR 1315.10(c) do not require the Government to pay interest penalties if payment delays are due to disagreement between the Government and the Contractor over the payment amount or other issues involving contract compliance, or on amounts temporarily withheld or retained in accordance with the terms of the contract. The Government and the Contractor shall resolve claims involving disputes, and any interest that may be payable in accordance with the clause at FAR 52.233-1, Disputes.

(5) Discounts for prompt payment. The designated payment office will pay an interest penalty automatically, without request from the Contractor, if the Government takes a discount for prompt payment improperly. The Government will calculate the interest penalty in accordance with the prompt payment regulations at 5 CFR part 1315.

(6) Additional interest penalty. (i) The designated payment office will pay a penalty amount, calculated in accordance with the prompt payment regulations at 5 CFR part 1315 in addition to the interest penalty amount only if--

(A) The Government owes an interest penalty of \$1 or more;

(B) The designated payment office does not pay the interest penalty within 10 days after the date the invoice amount is paid; and

(C) The Contractor makes a written demand to the designated payment office for additional penalty payment, in accordance with paragraph (a)(6)(ii) of this clause, postmarked not later than 40 days after the date the invoice amount is paid.

(ii)(A) The Contractor shall support written demands for additional penalty payments with the following data. The Government will not request any additional data. The Contractor shall--

(1) Specifically assert that late payment interest is due under a specific invoice, and request payment of all overdue late payment interest penalty and such additional penalty as may be required;

(2) Attach a copy of the invoice on which the unpaid late payment interest was due; and

(3) State that payment of the principal has been received, including the date of receipt.

(B) If there is no postmark or the postmark is illegible--

(1) The designated payment office that receives the demand will annotate it with the date of receipt provided the demand is received on or before the 40th day after payment was made; or

(2) If the designated payment office fails to make the required annotation, the Government will determine the demand's validity based on the date the Contractor has placed on the demand, provided such date is no later than the 40th day after payment was made.



(b) Contract financing payments. If this contract provides for contract financing, the Government will make contract financing payments in accordance with the applicable contract financing clause.

(c) Subcontract clause requirements. The Contractor shall include in each subcontract for property or services (including a material supplier) for the purpose of performing this contract the following:

(1) Prompt payment for subcontractors. A payment clause that obligates the Contractor to pay the subcontractor for satisfactory performance under its subcontract not later than 7 days from receipt of payment out of such amounts as are paid to the Contractor under this contract.

(2) Interest for subcontractors. An interest penalty clause that obligates the Contractor to pay to the subcontractor an interest penalty for each payment not made in accordance with the payment clause--

(i) For the period beginning on the day after the required payment date and ending on the date on which payment of the amount due is made; and

(ii) Computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contract Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty.

(3) Subcontractor clause flowdown. A clause requiring each subcontractor to use:

(i) Include a payment clause and an interest penalty clause conforming to the standards set forth in paragraphs (c)(1) and (c)(2) of this clause in each of its subcontracts; and

(ii) Require each of its subcontractors to include such clauses in their subcontracts with each lower-tier subcontractor or supplier.

(d) Subcontract clause interpretation. The clauses required by paragraph (c) of this clause shall not be construed to impair the right of the Contractor or a subcontractor at any tier to negotiate, and to include in their subcontract, provisions that--

(1) Retainage permitted. Permit the Contractor or a subcontractor to retain (without cause) a specified percentage of each progress payment otherwise due to a subcontractor for satisfactory performance under the subcontract without incurring any obligation to pay a late payment interest penalty, in accordance with terms and conditions agreed to by the parties to the subcontract, giving such recognition as the parties deem appropriate to the ability of a subcontractor to furnish a performance bond and a payment bond;

(2) Withholding permitted. Permit the Contractor or subcontractor to make a determination that part or all of the subcontractor's request for payment may be withheld in accordance with the subcontract agreement; and

(3) Withholding requirements. Permit such withholding without incurring any obligation to pay a late payment penalty if--

(i) A notice conforming to the standards of paragraph (g) of this clause previously has been furnished to the subcontractor; and

(ii) The Contractor furnishes to the Contracting Officer a copy of any notice issued by a Contractor pursuant to paragraph (d)(3)(i) of this clause.

(e) Subcontractor withholding procedures. If a Contractor, after making a request for payment to the Government but before making a payment to a subcontractor for the subcontractor's performance covered by the payment request, discovers that all or a portion of the payment otherwise due such subcontractor is subject to withholding from the subcontractor in accordance with the subcontract agreement, then the Contractor shall--

(1) Subcontractor notice. Furnish to the subcontractor a notice conforming to the standards of paragraph (g) of this clause as soon as practicable upon ascertaining the cause giving rise to a withholding, but prior to the due date for subcontractor payment;

(2) Contracting Officer notice. Furnish to the Contracting Officer, as soon as practicable, a copy of the notice furnished to the subcontractor pursuant to paragraph (e)(1) of this clause;

(3) Subcontractor progress payment reduction. Reduce the subcontractor's progress payment by an amount not to exceed the amount specified in the notice of withholding furnished under paragraph (e)(1) of this clause;

(4) Subsequent subcontractor payment. Pay the subcontractor as soon as practicable after the correction of the identified subcontract performance deficiency, and--

(i) Make such payment within--

(A) Seven days after correction of the identified subcontract performance deficiency (unless the funds therefor must be recovered from the Government because of a reduction under paragraph (e)(5)(i)) of this clause; or

(B) Seven days after the Contractor recovers such funds from the Government; or

(ii) Incur an obligation to pay a late payment interest penalty computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contracts Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty;

(5) Notice to Contracting Officer. Notify the Contracting Officer upon--

(i) Reduction of the amount of any subsequent certified application for payment; or

(ii) Payment to the subcontractor of any withheld amounts of a progress payment, specifying--

(A) The amounts withheld under paragraph (e)(1) of this clause; and

(B) The dates that such withholding began and ended; and

(6) Interest to Government. Be obligated to pay to the Government an amount equal to interest on the withheld payments (computed in the manner provided in 31 U.S.C. 3903(c)(1)), from the 8th day after receipt of the withheld amounts from the Government until--

(i) The day the identified subcontractor performance deficiency is corrected; or

(ii) The date that any subsequent payment is reduced under paragraph (e)(5)(i) of this clause.

(f) Third-party deficiency reports--(1) Withholding from subcontractor. If a Contractor, after making payment to a first-tier subcontractor, receives from a supplier or subcontractor of the first-tier subcontractor (hereafter referred to as a "second-tier subcontractor") a written notice in accordance with section 2 of the Act of August 24, 1935 (40 U.S.C. 270b, Miller Act), asserting a deficiency in such first-tier subcontractor's performance under the contract for which the Contractor may be ultimately liable, and the Contractor determines that all or a portion of future payments otherwise due such first-tier subcontractor is subject to withholding in accordance with the subcontract agreement, the Contractor may, without incurring an obligation to pay an interest penalty under paragraph (e)(6) of this clause--

(i) Furnish to the first-tier subcontractor a notice conforming to the standards of paragraph (g) of this clause as soon as practicable upon making such determination; and

(ii) Withhold from the first-tier subcontractor's next available progress payment or payments an amount not to exceed the amount specified in the notice of withholding furnished under paragraph (f)(1)(i) of this clause.

(2) Subsequent payment or interest charge. As soon as practicable, but not later than 7 days after receipt of satisfactory written notification that the identified subcontract performance deficiency has been corrected, the Contractor shall--

(i) Pay the amount withheld under paragraph (f)(1)(ii) of this clause to such first-tier subcontractor; or

(ii) Incur an obligation to pay a late payment interest penalty to such first-tier subcontractor computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contracts Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty.

(g) Written notice of subcontractor withholding. The Contractor shall issue a written notice of any withholding to a subcontractor (with a copy furnished to the Contracting Officer), specifying--

(1) The amount to be withheld;

(2) The specific causes for the withholding under the terms of the subcontract; and

(3) The remedial actions to be taken by the subcontractor in order to receive payment of the amounts withheld.

(h) Subcontractor payment entitlement. The Contractor may not request payment from the Government of any amount withheld or retained in accordance with paragraph (d) of this clause until such time as the Contractor has determined and certified to the Contracting Officer that the subcontractor is entitled to the payment of such amount.

(i) Prime-subcontractor disputes. A dispute between the Contractor and subcontractor relating to the amount or entitlement of a subcontractor to a payment or a late payment interest penalty under a clause included in the subcontract pursuant to paragraph (c) of this clause does not constitute a dispute to which the Government is a party. The Government may not be interpleaded in any judicial or administrative proceeding involving such a dispute.

(j) Preservation of prime-subcontractor rights. Except as provided in paragraph (i) of this clause, this clause shall not limit or impair any contractual, administrative, or judicial remedies otherwise available to the Contractor or a subcontractor in the event of a dispute involving late payment or nonpayment by the Contractor or deficient subcontract performance or nonperformance by a subcontractor.

(k) Non-recourse for prime contractor interest penalty. The Contractor's obligation to pay an interest penalty to a subcontractor pursuant to the clauses included in a subcontract under paragraph (c) of this clause shall not be construed to be an obligation of the Government for such interest penalty. A cost-reimbursement claim may not include any amount for reimbursement of such interest penalty.

(l) Overpayments. If the Contractor becomes aware of a duplicate payment or that the Government has otherwise overpaid on an invoice payment, the Contractor shall immediately notify the Contracting Officer and request instructions for disposition of the overpayment.

(End of clause)

## 52.233-1 Disputes. (JUL 2002)

- (a) This contract is subject to the Contract Disputes Act of 1978, as amended (41 U.S.C. 601-613).
- (b) Except as provided in the Act, all disputes arising under or relating to this contract shall be resolved under this clause.
- (c) Claim, as used in this clause, means a written demand or written assertion by one of the contracting parties seeking, as a matter of right, the payment of money in a sum certain, the adjustment or interpretation of contract terms, or other relief arising under or relating to this contract. However, a written demand or written assertion by the Contractor seeking the payment of money exceeding \$100,000 is not a claim under the Act until certified. A voucher, invoice, or other routine request for payment that is not in dispute when submitted is not a claim under the Act. The submission may be converted to a claim under the Act, by complying with the submission and certification requirements of this clause, if it is disputed either as to liability or amount or is not acted upon in a reasonable time.
- (d)(1) A claim by the Contractor shall be made in writing and, unless otherwise stated in this contract, submitted within 6 years after accrual of the claim to the Contracting Officer for a written decision. A claim by the Government against the Contractor shall be subject to a written decision by the Contracting Officer.
- (2)(i) The contractors shall provide the certification specified in subparagraph (d)(2)(iii) of this clause when submitting any claim -
- (A) Exceeding \$100,000; or
- (B) Regardless of the amount claimed, when using -
- (1) Arbitration conducted pursuant to 5 U.S.C. 575-580; or
- (2) Any other alternative means of dispute resolution (ADR) technique that the agency elects to handle in accordance with the Administrative Dispute Resolution Act (ADRA).
- (ii) The certification requirement does not apply to issues in controversy that have not been submitted as all or part of a claim.
- (iii) The certification shall state as follows: "I certify that the claim is made in good faith; that the supporting data are accurate and complete to the best of my knowledge and belief; that the amount requested accurately reflects the contract adjustment for which the Contractor believes the Government is liable; and that I am duly authorized to certify the claim on behalf of the Contractor.
- (3) The certification may be executed by any person duly authorized to bind the Contractor with respect to the claim.
- (e) For Contractor claims of \$100,000 or less, the Contracting Officer must, if requested in writing by the Contractor, render a decision within 60 days of the request. For Contractor-certified claims over \$100,000, the Contracting Officer must, within 60 days, decide the claim or notify the Contractor of the date by which the decision will be made.
- (f) The Contracting Officer's decision shall be final unless the Contractor appeals or files a suit as provided in the Act.
- (g) If the claim by the Contractor is submitted to the Contracting Officer or a claim by the Government is presented to the Contractor, the parties, by mutual consent, may agree to use alternative dispute resolution (ADR). If the Contractor refuses an offer for ADR, the Contractor shall inform the Contracting Officer, in writing, of the Contractor's specific reasons for rejecting the request.

(h) The Government shall pay interest on the amount found due and unpaid from (1) the date the Contracting Officer receives the claim (certified, if required); or (2) the date that payment otherwise would be due, if that date is later, until the date of payment. With regard to claims having defective certifications, as defined in (FAR) 48 CFR 33.201, interest shall be paid from the date that the Contracting Officer initially receives the claim. Simple interest on claims shall be paid at the rate, fixed by the Secretary of the Treasury as provided in the Act, which is applicable to the period during which the Contracting Officer receives the claim and then at the rate applicable for each 6-month period as fixed by the Treasury Secretary during the pendency of the claim.

(i) The Contractor shall proceed diligently with performance of this contract, pending final resolution of any request for relief, claim, appeal, or action arising under the contract, and comply with any decision of the Contracting Officer.

(End of clause)

#### 52.233-3 PROTEST AFTER AWARD (AUG. 1996)

(a) Upon receipt of a notice of protest (as defined in FAR 33.101) or a determination that a protest is likely (see FAR 33.102(d)), the Contracting Officer may, by written order to the Contractor, direct the Contractor to stop performance of the work called for by this contract. The order shall be specifically identified as a stop-work order issued under this clause. Upon receipt of the order, the Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of costs allocable to the work covered by the order during the period of work stoppage. Upon receipt of the final decision in the protest, the Contracting Officer shall either--

(1) Cancel the stop-work order; or

(2) Terminate the work covered by the order as provided in the Default, or the Termination for Convenience of the Government, clause of this contract.

(b) If a stop-work order issued under this clause is canceled either before or after a final decision in the protest, the Contractor shall resume work. The Contracting Officer shall make an equitable adjustment in the delivery schedule or contract price, or both, and the contract shall be modified, in writing, accordingly, if--

(1) The stop-work order results in an increase in the time required for, or in the Contractor's cost properly allocable to, the performance of any part of this contract; and

(2) The Contractor asserts its right to an adjustment within 30 days after the end of the period of work stoppage; provided, that if the Contracting Officer decides the facts justify the action, the Contracting Officer may receive and act upon a proposal at any time before final payment under this contract.

(c) If a stop-work order is not canceled and the work covered by the order is terminated for the convenience of the Government, the Contracting Officer shall allow reasonable costs resulting from the stop-work order in arriving at the termination settlement.

(d) If a stop-work order is not canceled and the work covered by the order is terminated for default, the Contracting Officer shall allow, by equitable adjustment or otherwise, reasonable costs resulting from the stop-work order.

(e) The Government's rights to terminate this contract at any time are not affected by action taken under this clause.

(f) If, as the result of the Contractor's intentional or negligent misstatement, misrepresentation, or miscertification, a protest related to this contract is sustained, and the Government pays costs, as provided

in FAR 33.102(b)(2) or 33.104(h)(1), the Government may require the Contractor to reimburse the Government the amount of such costs. In addition to any other remedy available, and pursuant to the requirements of Subpart 32.6, the Government may collect this debt by offsetting the amount against any payment due the Contractor under any contract between the Contractor and the Government.

(End of clause)

#### 52.236-2 DIFFERING SITE CONDITIONS (APR 1984)

As prescribed in 36.502, insert the following clause in solicitations and contracts when a fixed-price construction contract or a fixed-price dismantling, demolition, or removal of improvements contract is contemplated and the contract amount is expected to exceed the small purchase limitation. The Contracting Officer may insert the clause in solicitations and contracts when a fixed-price construction or a fixed-price contract for dismantling, demolition, or removal of improvements is contemplated and the contract amount is expected to be within the small purchase limitation.

(a) The Contractor shall promptly, and before the conditions are disturbed, give a written notice to the Contracting Officer of

(1) subsurface or latent physical conditions at the site which differ materially from those indicated in this contract, or

(2) unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the contract.

(b) The Contracting Officer shall investigate the site conditions promptly after receiving the notice. If the conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performing any part of the work under this contract, whether or not changed as a result of the conditions, an equitable adjustment shall be made under this clause and the contract modified in writing accordingly.

(c) No request by the Contractor for an equitable adjustment to the contract under this clause shall be allowed, unless the Contractor has given the written notice required; provided, that the time prescribed in (a) above for giving written notice may be extended by the Contracting Officer.

(d) No request by the Contractor for an equitable adjustment to the contract for differing site conditions shall be allowed if made after final payment under this contract.

(End of clause)

#### 52.236-3 SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK (APR 1984)

(a) The Contractor acknowledges that it has taken steps reasonably necessary to ascertain the nature and location of the work, and that it has investigated and satisfied itself as to the general and local conditions which can affect the work or its cost, including but not limited to

(1) conditions bearing upon transportation, disposal, handling, and storage of materials;

(2) the availability of labor, water, electric power, and roads;

(3) uncertainties of weather, river stages, tides, or similar physical conditions at the site;

(4) the conformation and conditions of the ground; and (5) the character of equipment and facilities needed preliminary to and during work performance. The Contractor also acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered

insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory work done by the Government, as well as from the drawings and specifications made a part of this contract. Any failure of the Contractor to take the actions described and acknowledged in this paragraph will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to the Government.

(b) The Government assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the Government. Nor does the Government assume responsibility for any understanding reached or representation made concerning conditions which can affect the work by any of its officers or agents before the execution of this contract, unless that understanding or representation is expressly stated in this contract.

(End of clause)

#### 52.236-5 MATERIAL AND WORKMANSHIP (APR 1984)

(a) All equipment, material, and articles incorporated into the work covered by this contract shall be new and of the most suitable grade for the purpose intended, unless otherwise specifically provided in this contract. References in the specifications to equipment, material, articles, or patented processes by trade name, make, or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition. The Contractor may, at its option, use any equipment, material, article, or process that, in the judgment of the Contracting Officer, is equal to that named in the specifications, unless otherwise specifically provided in this contract.

(b) The Contractor shall obtain the Contracting Officer's approval of the machinery and mechanical and other equipment to be incorporated into the work. When requesting approval, the Contractor shall furnish to the Contracting Officer the name of the manufacturer, the model number, and other information concerning the performance, capacity, nature, and rating of the machinery and mechanical and other equipment. When required by this contract or by the Contracting Officer, the Contractor shall also obtain the Contracting Officer's approval of the material or articles which the Contractor contemplates incorporating into the work. When requesting approval, the Contractor shall provide full information concerning the material or articles. When directed to do so, the Contractor shall submit samples for approval at the Contractor's expense, with all shipping charges prepaid. Machinery, equipment, material, and articles that do not have the required approval shall be installed or used at the risk of subsequent rejection.

(c) All work under this contract shall be performed in a skillful and workmanlike manner. The Contracting Officer may require, in writing, that the Contractor remove from the work any employee the Contracting Officer deems incompetent, careless, or otherwise objectionable.

(End of clause)

#### 52.236-6 SUPERINTENDENCE BY THE CONTRACTOR (APR 1984)

At all times during performance of this contract and until the work is completed and accepted, the Contractor shall directly superintend the work or assign and have on the worksite a competent superintendent who is satisfactory to the Contracting Officer and has authority to act for the Contractor.

(End of clause)

#### 52.236-7 PERMITS AND RESPONSIBILITIES (NOV 1991)

The Contractor shall, without additional expense to the Government, be responsible for obtaining any necessary licenses and permits, and for complying with any Federal, State, and municipal laws, codes, and regulations applicable to the performance of the work. The Contractor shall also be responsible for all damages to persons or property that occur as a result of the Contractor's fault or negligence. The

Contractor shall also be responsible for all materials delivered and work performed until completion and acceptance of the entire work, except for any completed unit of work which may have been accepted under the contract.

(End of clause)

#### 52.236-8 OTHER CONTRACTS (APR 1984)

The Government may undertake or award other contracts for additional work at or near the site of the work under this contract. The Contractor shall fully cooperate with the other contractors and with Government employees and shall carefully adapt scheduling and performing the work under this contract to accommodate the additional work, heeding any direction that may be provided by the Contracting Officer. The Contractor shall not commit or permit any act that will interfere with the performance of work by any other contractor or by Government employees.

(End of clause)

#### 52.236-9 PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS (APR 1984)

(a) The Contractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and grass) on or adjacent to the work site, which are not to be removed and which do not unreasonably interfere with the work required under this contract. The Contractor shall only remove trees when specifically authorized to do so, and shall avoid damaging vegetation that will remain in place. If any limbs or branches of trees are broken during contract performance, or by the careless operation of equipment, or by workmen, the Contractor shall trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound as directed by the Contracting Officer.

(b) The Contractor shall protect from damage all existing improvements and utilities

(1) at or near the work site, and

(2) on adjacent property of a third party, the locations of which are made known to or should be known by the Contractor. The Contractor shall repair any damage to those facilities, including those that are the property of a third party, resulting from failure to comply with the requirements of this contract or failure to exercise reasonable care in performing the work. If the Contractor fails or refuses to repair the damage promptly, the Contracting Officer may have the necessary work performed and charge the cost to the Contractor.

(End of clause)

#### 52.236-10 OPERATIONS AND STORAGE AREAS (APR 1984)

(a) The Contractor shall confine all operations (including storage of materials) on Government premises to areas authorized or approved by the Contracting Officer. The Contractor shall hold and save the Government, its officers and agents, free and harmless from liability of any nature occasioned by the Contractor's performance.

(b) Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be erected by the Contractor only with the approval of the Contracting Officer and shall be built with labor and materials furnished by the Contractor without expense to the Government. The temporary buildings and utilities shall remain the property of the Contractor and shall be removed by the Contractor at its expense upon completion of the work. With the written consent of the Contracting Officer, the buildings and utilities may be abandoned and need not be removed.

(c) The Contractor shall, under regulations prescribed by the Contracting Officer, use only established



roadways, or use temporary roadways constructed by the Contractor when and as authorized by the Contracting Officer. When materials are transported in prosecuting the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any Federal, State, or local law or regulation. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.

(End of clause)

#### 52.236-11 USE AND POSSESSION PRIOR TO COMPLETION (APR 1984)

(a) The Government shall have the right to take possession of or use any completed or partially completed part of the work. Before taking possession of or using any work, the Contracting Officer shall furnish the Contractor a list of items of work remaining to be performed or corrected on those portions of the work that the Government intends to take possession of or use. However, failure of the Contracting Officer to list any item of work shall not relieve the Contractor of responsibility for complying with the terms of the contract. The Government's possession or use shall not be deemed an acceptance of any work under the contract.

(b) While the Government has such possession or use, the Contractor shall be relieved of the responsibility for the loss of or damage to the work resulting from the Government's possession or use, notwithstanding the terms of the clause in this contract entitled "Permits and Responsibilities." If prior possession or use by the Government delays the progress of the work or causes additional expense to the Contractor, an equitable adjustment shall be made in the contract price or the time of completion, and the contract shall be modified in writing accordingly.

(End of clause)

#### 52.236-12 CLEANING UP (APR 1984)

The Contractor shall at all times keep the work area, including storage areas, free from accumulations of waste materials. Before completing the work, the Contractor shall remove from the work and premises any rubbish, tools, scaffolding, equipment, and materials that are not the property of the Government. Upon completing the work, the Contractor shall leave the work area in a clean, neat, and orderly condition satisfactory to the Contracting Officer.

(End of clause)

#### 52.236-13 ACCIDENT PREVENTION (NOV 1991)

(a) The Contractor shall provide and maintain work environments and procedures which will

(1) safeguard the public and Government personnel, property, materials, supplies, and equipment exposed to Contractor operations and activities;

(2) avoid interruptions of Government operations and delays in project completion dates; and

(3) control costs in the performance of this contract.

(b) For these purposes on contracts for construction or dismantling, demolition, or removal of improvements, the Contractor shall-

(1) Provide appropriate safety barricades, signs, and signal lights;

(2) Comply with the standards issued by the Secretary of Labor at 29 CFR Part 1926 and 29 CFR Part 1910; and

(3) Ensure that any additional measures the Contracting Officer determines to be reasonably necessary for the purposes are taken.

(c) If this contract is for construction or dismantling, demolition or removal of improvements with any Department of Defense agency or component, the Contractor shall comply with all pertinent provisions of the latest version of U.S. Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, in effect on the date of the solicitation.

(d) Whenever the Contracting Officer becomes aware of any noncompliance with these requirements or any condition which poses a serious or imminent danger to the health or safety of the public or Government personnel, the Contracting Officer shall notify the Contractor orally, with written confirmation, and request immediate initiation of corrective action. This notice, when delivered to the Contractor or the Contractor's representative at the work site, shall be deemed sufficient notice of the noncompliance and that corrective action is required. After receiving the notice, the Contractor shall immediately take corrective action. If the Contractor fails or refuses to promptly take corrective action, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. The Contractor shall not be entitled to any equitable adjustment of the contract price or extension of the performance schedule on any stop work order issued under this clause.

(3) The Contractor shall insert this clause, including this paragraph (e), with appropriate changes in the designation of the parties, in subcontracts.

(End of clause)

#### 52.236-15 SCHEDULES FOR CONSTRUCTION CONTRACTS (APR 1984)

(a) The Contractor shall, within five days after the work commences on the contract or another period of time determined by the Contracting Officer, prepare and submit to the Contracting Officer for approval three copies of a practicable schedule showing the order in which the Contractor proposes to perform the work, and the dates on which the Contractor contemplates starting and completing the several salient features of the work (including acquiring materials, plant, and equipment). The schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of work scheduled for completion by any given date during the period. If the Contractor fails to submit a schedule within the time prescribed, the Contracting Officer may withhold approval of progress payments until the Contractor submits the required schedule.

(b) The Contractor shall enter the actual progress on the chart as directed by the Contracting Officer, and upon doing so shall immediately deliver three copies of the annotated schedule to the Contracting Officer. If, in the opinion of the Contracting Officer, the Contractor falls behind the approved schedule, the Contractor shall take steps necessary to improve its progress, including those that may be required by the Contracting Officer, without additional cost to the Government. In this circumstance, the Contracting Officer may require the Contractor to increase the number of shifts, overtime operations, days of work, and/or the amount of construction plant, and to submit for approval any supplementary schedule or schedules in chart form as the Contracting Officer deems necessary to demonstrate how the approved rate of progress will be regained.

(c) Failure of the Contractor to comply with the requirements of the Contracting Officer under this clause shall be grounds for a determination by the Contracting Officer that the Contractor is not prosecuting the work with sufficient diligence to ensure completion within the time specified in the contract. Upon making this determination, the Contracting Officer may terminate the Contractor's right to proceed with the work, or any separable part of it, in accordance with the default terms of this contract.

(End of clause)

## 52.236-17 LAYOUT OF WORK (APR 1984)

The Contractor shall lay out its work from Government established base lines and bench marks indicated on the drawings, and shall be responsible for all measurements in connection with the layout. The Contractor shall furnish, at its own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the work. The Contractor shall be responsible for executing the work to the lines and grades that may be established or indicated by the Contracting Officer. The Contractor shall also be responsible for maintaining and preserving all stakes and other marks established by the Contracting Officer until authorized to remove them. If such marks are destroyed by the Contractor or through its negligence before their removal is authorized, the Contracting Officer may replace them and deduct the expense of the replacement from any amounts due or to become due to the Contractor.

(End of clause)

## 52.236-21 SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION (FEB 1997)

(a) The Contractor shall keep on the work site a copy of the drawings and specifications and shall at all times give the Contracting Officer access thereto. Anything mentioned in the specifications and not shown on the drawings, or shown on the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both. In case of difference between drawings and specifications, the specifications shall govern. In case of discrepancy in the figures, in the drawings, or in the specifications, the matter shall be promptly submitted to the Contracting Officer, who shall promptly make a determination in writing. Any adjustment by the Contractor without such a determination shall be at its own risk and expense. The Contracting Officer shall furnish from time to time such detailed drawings and other information as considered necessary, unless otherwise provided.

(b) Wherever in the specifications or upon the drawings the words "directed", "required", "ordered", "designated", "prescribed", or words of like import are used, it shall be understood that the "direction", "requirement", "order", "designation", or "prescription", of the Contracting Officer is intended and similarly the words "approved", "acceptable", "satisfactory", or words of like import shall mean "approved by," or "acceptable to", or "satisfactory to" the Contracting Officer, unless otherwise expressly stated.

(c) Where "as shown," "as indicated", "as detailed", or words of similar import are used, it shall be understood that the reference is made to the drawings accompanying this contract unless stated otherwise. The word "provided" as used herein shall be understood to mean "provide complete in place," that is "furnished and installed".

(d) Shop drawings means drawings, submitted to the Government by the Contractor, subcontractor, or any lower tier subcontractor pursuant to a construction contract, showing in detail (1) the proposed fabrication and assembly of structural elements, and (2) the installation (i.e., fit, and attachment details) of materials or equipment. It includes drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, and similar materials furnished by the contractor to explain in detail specific portions of the work required by the contract. The Government may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.

(e) If this contract requires shop drawings, the Contractor shall coordinate all such drawings, and review them for accuracy, completeness, and compliance with contract requirements and shall indicate its approval thereon as evidence of such coordination and review. Shop drawings submitted to the Contracting Officer without evidence of the Contractor's approval may be returned for resubmission. The Contracting Officer will indicate an approval or disapproval of the shop drawings and if not approved as submitted shall indicate the Government's reasons therefor. Any work done before such approval shall be at the Contractor's risk. Approval by the Contracting Officer shall not relieve the Contractor from responsibility for any errors or omissions in such drawings, nor from responsibility for complying with the requirements of this contract, except with respect to variations described and approved in accordance with (f) below.

(f) If shop drawings show variations from the contract requirements, the Contractor shall describe such

variations in writing, separate from the drawings, at the time of submission. If the Contracting Officer approves any such variation, the Contracting Officer shall issue an appropriate contract modification, except that, if the variation is minor or does not involve a change in price or in time of performance, a modification need not be issued.

(g) The Contractor shall submit to the Contracting Officer for approval four copies (unless otherwise indicated) of all shop drawings as called for under the various headings of these specifications. Three sets (unless otherwise indicated) of all shop drawings, will be retained by the Contracting Officer and one set will be returned to the Contractor.

(End of clause)

#### 52.236-26 PRECONSTRUCTION CONFERENCE (FEB 1995)

If the Contracting Officer decides to conduct a preconstruction conference, the successful offeror will be notified and will be required to attend. The Contracting Officer's notification will include specific details regarding the date, time, and location of the conference, any need for attendance by subcontractors, and information regarding the items to be discussed.

(End of clause)

#### 52.242-13 BANKRUPTCY (JUL 1995)

In the event the Contractor enters into proceedings relating to bankruptcy, whether voluntary or involuntary, the Contractor agrees to furnish, by certified mail or electronic commerce method authorized by the contract, written notification of the bankruptcy to the Contracting Officer responsible for administering the contract. This notification shall be furnished within five days of the initiation of the proceedings relating to bankruptcy filing. This notification shall include the date on which the bankruptcy petition was filed, the identity of the court in which the bankruptcy petition was filed, and a listing of Government contract numbers and contracting offices for all Government contracts against which final payment has not been made. This obligation remains in effect until final payment under this contract.

(End of clause)

#### 52.242-14 SUSPENSION OF WORK (APR 1984)

(a) The Contracting Officer may order the Contractor, in writing, to suspend, delay, or interrupt all or any part of the work of this contract for the period of time that the Contracting Officer determines appropriate for the convenience of the Government.

(b) If the performance of all or any part of the work is, for an unreasonable period of time, suspended, delayed, or interrupted (1) by an act of the Contracting Officer in the administration of this contract, or (2) by the Contracting Officer's failure to act within the time specified in this contract (or within a reasonable time if not specified), an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit) necessarily caused by the unreasonable suspension, delay, or interruption, and the contract modified in writing accordingly. However, no adjustment shall be made under this clause for any suspension, delay, or interruption to the extent that performance would have been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the Contractor, or for which an equitable adjustment is provided for or excluded under any other term or condition of this contract. (c) A claim under this clause shall not be allowed (1) for any costs incurred more than 20 days before the Contractor shall have notified the Contracting Officer in writing of the act or failure to act involved (but this requirement shall not apply as to a claim resulting from a suspension order), and (2) unless the claim, in an amount stated, is asserted in writing as soon as practicable after the termination of the suspension, delay, or interruption, but not later than the date of final payment under the contract.

(End of clause)

## 52.243-3 CHANGES--TIME-AND-MATERIALS OR LABOR-HOURS (SEP 2000)

(a) The Contracting Officer may at any time, by written order, and without notice to the sureties, if any, make changes within the general scope of this contract in any one or more of the following:

(1) Description of services to be performed.

(2) Time of performance (i.e., hours of the day, days of the week, etc.).

(3) Place of performance of the services.

(4) Drawings, designs, or specifications when the supplies to be furnished are to be specially manufactured for the Government in accordance with the drawings, designs, or specifications.

(5) Method of shipment or packing of supplies.

(6) Place of delivery.

(7) Amount of Government-furnished property.

(b) If any change causes an increase or decrease in any hourly rate, the ceiling price, or the time required for performance of any part of the work under this contract, whether or not changed by the order, or otherwise affects any other terms and conditions of this contract, the Contracting Officer will make an equitable adjustment in any one or more of the following and will modify the contract accordingly:

(1) Ceiling price.

(2) Hourly rates.

(3) Delivery schedule.

(4) Other affected terms.

(c) The Contractor shall assert its right to an adjustment under this clause within 30 days from the date of receipt of the written order. However, if the Contracting Officer decides that the facts justify it, the Contracting Officer may receive and act upon a proposal submitted before final payment of the contract.

(d) Failure to agree to any adjustment will be a dispute under the Disputes clause. However, nothing in this clause excuses the Contractor from proceeding with the contract as changed.

(End of clause)

## 52.246-12 INSPECTION OF CONSTRUCTION (AUG 1996)

(a) Definition. "Work" includes, but is not limited to, materials, workmanship, and manufacture and fabrication of components.

(b) The Contractor shall maintain an adequate inspection system and perform such inspections as will ensure that the work performed under the contract conforms to contract requirements. The Contractor shall maintain complete inspection records and make them available to the Government. All work shall be conducted under the general direction of the Contracting Officer and is subject to Government inspection and test at all places and at all reasonable times before acceptance to ensure strict compliance with the terms of the contract.

(c) Government inspections and tests are for the sole benefit of the Government and do not--

- (1) Relieve the Contractor of responsibility for providing adequate quality control measures;
  - (2) Relieve the Contractor of responsibility for damage to or loss of the material before acceptance;
  - (3) Constitute or imply acceptance; or
  - (4) Affect the continuing rights of the Government after acceptance of the completed work under paragraph (i) of this section.
- (d) The presence or absence of a Government inspector does not relieve the Contractor from any contract requirement, nor is the inspector authorized to change any term or condition of the specification without the Contracting Officer's written authorization.
- (e) The Contractor shall promptly furnish, at no increase in contract price, all facilities, labor, and material reasonably needed for performing such safe and convenient inspections and tests as may be required by the Contracting Officer. The Government may charge to the Contractor any additional cost of inspection or test when work is not ready at the time specified by the Contractor for inspection or test, or when prior rejection makes reinspection or retest necessary. The Government shall perform all inspections and tests in a manner that will not unnecessarily delay the work. Special, full size, and performance tests shall be performed as described in the contract.
- (f) The Contractor shall, without charge, replace or correct work found by the Government not to conform to contract requirements, unless in the public interest the Government consents to accept the work with an appropriate adjustment in contract price. The Contractor shall promptly segregate and remove rejected material from the premises.
- (g) If the Contractor does not promptly replace or correct rejected work, the Government may (1) by contract or otherwise, replace or correct the work and charge the cost to the Contractor or (2) terminate for default the Contractor's right to proceed.
- (h) If, before acceptance of the entire work, the Government decides to examine already completed work by removing it or tearing it out, the Contractor, on request, shall promptly furnish all necessary facilities, labor, and material. If the work is found to be defective or nonconforming in any material respect due to the fault of the Contractor or its subcontractors, the Contractor shall defray the expenses of the examination and of satisfactory reconstruction. However, if the work is found to meet contract requirements, the Contracting Officer shall make an equitable adjustment for the additional services involved in the examination and reconstruction, including, if completion of the work was thereby delayed, an extension of time.
- (i) Unless otherwise specified in the contract, the Government shall accept, as promptly as practicable after completion and inspection, all work required by the contract or that portion of the work the Contracting Officer determines can be accepted separately. Acceptance shall be final and conclusive except for latent defects, fraud, gross mistakes amounting to fraud, or the Government's rights under any warranty or guarantee.

(End of clause)

#### 52.246-21 WARRANTY OF CONSTRUCTION (MAR 1994)

- (a) In addition to any other warranties in this contract, the Contractor warrants, except as provided in paragraph (i) of this clause, that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, or design furnished, or workmanship performed by the Contractor or any subcontractor or supplier at any tier.

(b) This warranty shall continue for a period of 1 year from the date of final acceptance of the work. If the Government takes possession of any part of the work before final acceptance, this warranty shall continue for a period of 1 year from the date the Government takes possession.

(c) The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to Government-owned or controlled real or personal property, when that damage is the result of--

(1) The Contractor's failure to conform to contract requirements; or

(2) Any defect of equipment, material, workmanship, or design furnished.

(d) The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for 1 year from the date of repair or replacement.

(e) The Contracting Officer shall notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect, or damage.

(f) If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, the Government shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

(g) With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall--

(1) Obtain all warranties that would be given in normal commercial practice;

(2) Require all warranties to be executed, in writing, for the benefit of the Government, if directed by the Contracting Officer; and

(3) Enforce all warranties for the benefit of the Government, if directed by the Contracting Officer.

(h) In the event the Contractor's warranty under paragraph (b) of this clause has expired, the Government may bring suit at its expense to enforce a subcontractor's, manufacturer's, or supplier's warranty.

(i) Unless a defect is caused by the negligence of the Contractor or subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defects of material or design furnished by the Government nor for the repair of any damage that results from any defect in Government-furnished material or design.

(j) This warranty shall not limit the Government's rights under the Inspection and Acceptance clause of this contract with respect to latent defects, gross mistakes, or fraud.

(End of clause)

#### 52.248-3 VALUE ENGINEERING--CONSTRUCTION (FEB 2000)

(a) General. The Contractor is encouraged to develop, prepare, and submit value engineering change proposals (VECP's) voluntarily. The Contractor shall share in any instant contract savings realized from accepted VECP's, in accordance with paragraph (f) below.

(b) Definitions. "Collateral costs," as used in this clause, means agency costs of operation, maintenance, logistic support, or Government-furnished property.

"Collateral savings," as used in this clause, means those measurable net reductions resulting from a VECP in the agency's overall projected collateral costs, exclusive of acquisition savings, whether or not the acquisition cost changes.

"Contractor's development and implementation costs," as used in this clause, means those costs the Contractor incurs on a VECP specifically in developing, testing, preparing, and submitting the VECP, as well as those costs the Contractor incurs to make the contractual changes required by Government acceptance of a VECP.

"Government costs," as used in this clause, means those agency costs that result directly from developing and implementing the VECP, such as any net increases in the cost of testing, operations, maintenance, and logistic support. The term does not include the normal administrative costs of processing the VECP.

"Instant contract savings," as used in this clause, means the estimated reduction in Contractor cost of performance resulting from acceptance of the VECP, minus allowable Contractor's development and implementation costs, including subcontractors' development and implementation costs (see paragraph (h) below).

"Value engineering change proposal (VECP)" means a proposal that--

- (1) Requires a change to this, the instant contract, to implement; and
- (2) Results in reducing the contract price or estimated cost without impairing essential functions or characteristics; provided, that it does not involve a change--
  - (i) In deliverable end item quantities only; or
  - (ii) To the contract type only.
- (c) VECP preparation. As a minimum, the Contractor shall include in each VECP the information described in subparagraphs (1) through (7) below. If the proposed change is affected by contractually required configuration management or similar procedures, the instructions in those procedures relating to format, identification, and priority assignment shall govern VECP preparation. The VECP shall include the following:
  - (1) A description of the difference between the existing contract requirement and that proposed, the comparative advantages and disadvantages of each, a justification when an item's function or characteristics are being altered, and the effect of the change on the end item's performance.
  - (2) A list and analysis of the contract requirements that must be changed if the VECP is accepted, including any suggested specification revisions.
  - (3) A separate, detailed cost estimate for
    - (i) the affected portions of the existing contract requirement and
    - (ii) the VECP. The cost reduction associated with the VECP shall take into account the Contractor's allowable development and implementation costs, including any amount attributable to subcontracts under paragraph (h) below.
  - (4) A description and estimate of costs the Government may incur in implementing the VECP, such as test and evaluation and operating and support costs.
  - (5) A prediction of any effects the proposed change would have on collateral costs to the agency.



(6) A statement of the time by which a contract modification accepting the VECP must be issued in order to achieve the maximum cost reduction, noting any effect on the contract completion time or delivery schedule.

(7) Identification of any previous submissions of the VECP, including the dates submitted, the agencies and contract numbers involved, and previous Government actions, if known.

(d) Submission. The Contractor shall submit VECP's to the Resident Engineer at the worksite, with a copy to the Contracting Officer.

(e) Government action.

(1) The Contracting Officer will notify the Contractor of the status of the VECP within 45 calendar days after the contracting office receives it. If additional time is required, the Contracting Officer will notify the Contractor within the 45-day period and provide the reason for the delay and the expected date of the decision. The Government will process VECP's expeditiously; however, it shall not be liable for any delay in acting upon a VECP.

If the VECP is not accepted, the Contracting Officer will notify the Contractor in writing, explaining the reasons for rejection. The Contractor may withdraw any VECP, in whole or in part, at any time before it is accepted by the Government. The Contracting Officer may require that the Contractor provide written notification before undertaking significant expenditures for VECP effort.

Any VECP may be accepted, in whole or in part, by the Contracting Officer's award of a modification to this contract citing this clause. The Contracting Officer may accept the VECP, even though an agreement on price reduction has not been reached, by issuing the Contractor a notice to proceed with the change. Until a notice to proceed is issued or a contract modification applies a VECP to this contract, the Contractor shall perform in accordance with the existing contract. The decision to accept or reject all or part of any VECP is a unilateral decision made solely at the discretion of the Contracting Officer.

(f) Sharing.

(1) Rates. The Government's share of savings is determined by subtracting Government costs from instant contract savings and multiplying the result by

(i) 45 percent for fixed-price contracts or

(ii) 75 percent for cost-reimbursement contracts.

(2) Payment. Payment of any share due the Contractor for use of a VECP on this contract shall be authorized by a modification to this contract to--

(i) Accept the VECP;

(ii) Reduce the contract price or estimated cost by the amount of instant contract savings; and

(iii) Provide the Contractor's share of savings by adding the amount calculated to the contract price or fee.

(g) Collateral savings. If a VECP is accepted, the Contracting Officer will increase the instant contract amount by 20 percent of any projected collateral savings determined to be realized in a typical year of use after subtracting any Government costs not previously offset. However, the Contractor's share of collateral savings will not exceed the contract's firm-fixed-price or estimated cost, at the time the VECP is accepted, or \$100,000, whichever is greater. The Contracting Officer is the sole determiner of the amount of collateral savings.

(h) Subcontracts. The Contractor shall include an appropriate value engineering clause in any subcontract of \$50,000 or more and may include one in subcontracts of lesser value. In computing any adjustment in this contract's price under paragraph (f) above, the Contractor's allowable development and implementation costs shall include any subcontractor's allowable development and implementation costs clearly resulting from a VECP accepted by the Government under this contract, but shall exclude any value engineering incentive payments to a subcontractor. The Contractor may choose any arrangement for subcontractor value engineering incentive payments; provided, that these payments shall not reduce the Government's share of the savings resulting from the VECP.

(i) Data. The Contractor may restrict the Government's right to use any part of a VECP or the supporting data by marking the following legend on the affected parts:

"These data, furnished under the Value Engineering-- Construction clause of contract . . . . ., shall not be disclosed outside the Government or duplicated, used, or disclosed, in whole or in part, for any purpose other than to evaluate a value engineering change proposal submitted under the clause. This restriction does not limit the Government's right to use information contained in these data if it has been obtained or is otherwise available from the Contractor or from another source without limitations." If a VECP is accepted, the Contractor hereby grants the Government unlimited rights in the VECP and supporting data, except that, with respect to data qualifying and submitted as limited rights technical data, the Government shall have the rights specified in the contract modification implementing the VECP and shall appropriately mark the data. (The terms "unlimited rights" and "limited rights" are defined in Part 27 of the Federal Acquisition Regulation.)

(End of clause)

#### 52.249-2 TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED-PRICE) (SEP 1996)

(a) The Government may terminate performance of work under this contract in whole or, from time to time, in part if the Contracting Officer determines that a termination is in the Government's interest. The Contracting Officer shall terminate by delivering to the Contractor a Notice of Termination specifying the extent of termination and the effective date.

(b) After receipt of a Notice of Termination, and except as directed by the Contracting Officer, the Contractor shall immediately proceed with the following obligations, regardless of any delay in determining or adjusting any amounts due under this clause:

(1) Stop work as specified in the notice.

(2) Place no further subcontracts or orders (referred to as subcontracts in this clause) for materials, services, or facilities, except as necessary to complete the continued portion of the contract.

(3) Terminate all subcontracts to the extent they relate to the work terminated.

(4) Assign to the Government, as directed by the Contracting Officer, all right, title, and interest of the Contractor under the subcontracts terminated, in which case the Government shall have the right to settle or to pay any termination settlement proposal arising out of those terminations.

(5) With approval or ratification to the extent required by the Contracting Officer, settle all outstanding liabilities and termination settlement proposals arising from the termination of subcontracts; the approval or ratification will be final for purposes of this clause.

(6) As directed by the Contracting Officer, transfer title and deliver to the Government (i) the fabricated or unfabricated parts, work in process, completed work, supplies, and other material produced or acquired for the work terminated, and (ii) the completed or partially completed plans, drawings, information, and other property that, if the contract had been completed, would be required to be furnished to the Government.

(7) Complete performance of the work not terminated.

(8) Take any action that may be necessary, or that the Contracting Officer may direct, for the protection and preservation of the property related to this contract that is in the possession of the Contractor and in which the Government has or may acquire an interest.

(9) Use its best efforts to sell, as directed or authorized by the Contracting Officer, any property of the types referred to in subparagraph (b)(6) of this clause; provided, however, that the Contractor (i) is not required to extend credit to any purchaser and (ii) may acquire the property under the conditions prescribed by, and at prices approved by, the Contracting Officer. The proceeds of any transfer or disposition will be applied to reduce any payments to be made by the Government under this contract, credited to the price or cost of the work, or paid in any other manner directed by the Contracting Officer.

(c) The Contractor shall submit complete termination inventory schedules no later than 120 days from the effective date of termination, unless extended in writing by the Contracting Officer upon written request of the Contractor within this 120-day period.

(d) After expiration of the plant clearance period as defined in Subpart 45.6 of the Federal Acquisition Regulation, the Contractor may submit to the Contracting Officer a list, certified as to quantity and quality, of termination inventory not previously disposed of, excluding items authorized for disposition by the Contracting Officer. The Contractor may request the Government to remove those items or enter into an agreement for their storage. Within 15 days, the Government will accept title to those items and remove them or enter into a storage agreement. The Contracting Officer may verify the list upon removal of the items, or if stored, within 45 days from submission of the list, and shall correct the list, as necessary, before final settlement.

(e) After termination, the Contractor shall submit a final termination settlement proposal to the Contracting Officer in the form and with the certification prescribed by the Contracting Officer. The Contractor shall submit the proposal promptly, but no later than 1 year from the effective date of termination, unless extended in writing by the Contracting Officer upon written request of the Contractor within this 1-year period. However, if the Contracting Officer determines that the facts justify it, a termination settlement proposal may be received and acted on after 1 year or any extension. If the Contractor fails to submit the proposal within the time allowed, the Contracting Officer may determine, on the basis of information available, the amount, if any, due the Contractor because of the termination and shall pay the amount determined.

(f) Subject to paragraph (e) of this clause, the Contractor and the Contracting Officer may agree upon the whole or any part of the amount to be paid or remaining to be paid because of the termination. The amount may include a reasonable allowance for profit on work done. However, the agreed amount, whether under this paragraph (g) or paragraph (g) of this clause, exclusive of costs shown in subparagraph (g)(3) of this clause, may not exceed the total contract price as reduced by (1) the amount of payments previously made and (2) the contract price of work not terminated. The contract shall be modified, and the Contractor paid the agreed amount. Paragraph (g) of this clause shall not limit, restrict, or affect the amount that may be agreed upon to be paid under this paragraph.

(g) If the Contractor and the Contracting Officer fail to agree on the whole amount to be paid because of the termination of work, the Contracting Officer shall pay the Contractor the amounts determined by the Contracting Officer as follows, but without duplication of any amounts agreed on under paragraph (f) of this clause:

(1) The contract price for completed supplies or services accepted by the Government (or sold or acquired under subparagraph (b)(9) of this clause) not previously paid for, adjusted for any saving of freight and other charges.

(2) The total of--

- (i) The costs incurred in the performance of the work terminated, including initial costs and preparatory expense allocable thereto, but excluding any costs attributable to supplies or services paid or to be paid under subparagraph (f)(1) of this clause;
  - (ii) The cost of settling and paying termination settlement proposals under terminated subcontracts that are properly chargeable to the terminated portion of the contract if not included in subdivision (g)(2)(i) of this clause; and
  - (iii) A sum, as profit on subdivision (g)(2)(i) of this clause, determined by the Contracting Officer under 49.202 of the Federal Acquisition Regulation, in effect on the date of this contract, to be fair and reasonable; however, if it appears that the Contractor would have sustained a loss on the entire contract had it been completed, the Contracting Officer shall allow no profit under this subdivision (iii) and shall reduce the settlement to reflect the indicated rate of loss.
- (3) The reasonable costs of settlement of the work terminated, including--
- (i) Accounting, legal, clerical, and other expenses reasonably necessary for the preparation of termination settlement proposals and supporting data;
  - (ii) The termination and settlement of subcontracts (excluding the amounts of such settlements); and
  - (iii) Storage, transportation, and other costs incurred, reasonably necessary for the preservation, protection, or disposition of the termination inventory.
- (h) Except for normal spoilage, and except to the extent that the Government expressly assumed the risk of loss, the Contracting Officer shall exclude from the amounts payable to the Contractor under paragraph (g) of this clause, the fair value, as determined by the Contracting Officer, of property that is destroyed, lost, stolen, or damaged so as to become undeliverable to the Government or to a buyer.
- (i) The cost principles and procedures of Part 31 of the Federal Acquisition Regulation, in effect on the date of this contract, shall govern all costs claimed, agreed to, or determined under this clause.
- (j) The Contractor shall have the right of appeal, under the Disputes clause, from any determination made by the Contracting Officer under paragraph (e), (g), or (l) of this clause, except that if the Contractor failed to submit the termination settlement proposal or request for equitable adjustment within the time provided in paragraph (e) or (l), respectively, and failed to request a time extension, there is no right of appeal.
- (k) In arriving at the amount due the Contractor under this clause, there shall be deducted--
- (1) All unliquidated advance or other payments to the Contractor under the terminated portion of this contract;
  - (2) Any claim which the Government has against the Contractor under this contract; and
  - (3) The agreed price for, or the proceeds of sale of, materials, supplies, or other things acquired by the Contractor or sold under the provisions of this clause and not recovered by or credited to the Government.
- (l) If the termination is partial, the Contractor may file a proposal with the Contracting Officer for an equitable adjustment of the price(s) of the continued portion of the contract. The Contracting Officer shall make any equitable adjustment agreed upon. Any proposal by the Contractor for an equitable adjustment under this clause shall be requested within 90 days from the effective date of termination unless extended in writing by the Contracting Officer.
- (m)(1) The Government may, under the terms and conditions it prescribes, make partial payments and payments against costs incurred by the Contractor for the terminated portion of the contract, if the

Contracting Officer believes the total of these payments will not exceed the amount to which the Contractor will be entitled.

(2) If the total payments exceed the amount finally determined to be due, the Contractor shall repay the excess to the Government upon demand, together with interest computed at the rate established by the Secretary of the Treasury under 50 U.S.C. App. 1215(b)(2). Interest shall be computed for the period from the date the excess payment is received by the Contractor to the date the excess is repaid. Interest shall not be charged on any excess payment due to a reduction in the Contractor's termination settlement proposal because of retention or other disposition of termination inventory until 10 days after the date of the retention or disposition, or a later date determined by the Contracting Officer because of the circumstances.

(n) Unless otherwise provided in this contract or by statute, the Contractor shall maintain all records and documents relating to the terminated portion of this contract for 3 years after final settlement. This includes all books and other evidence bearing on the Contractor's costs and expenses under this contract. The Contractor shall make these records and documents available to the Government, at the Contractor's office, at all reasonable times, without any direct charge. If approved by the Contracting Officer, photographs, microphotographs, or other authentic reproductions may be maintained instead of original records and documents.

(End of clause)

#### 52.249-10 DEFAULT (FIXED-PRICE CONSTRUCTION) (APR 1984)

(a) If the Contractor refuses or fails to prosecute the work or any separable part, with the diligence that will insure its completion within the time specified in this contract including any extension, or fails to complete the work within this time, the Government may, by written notice to the Contractor, terminate the right to proceed with the work (or the separable part of the work) that has been delayed. In this event, the Government may take over the work and complete it by contract or otherwise, and may take possession of and use any materials, appliances, and plant on the work site necessary for completing the work. The Contractor and its sureties shall be liable for any damage to the Government resulting from the Contractor's refusal or failure to complete the work within the specified time, whether or not the Contractor's right to proceed with the work is terminated. This liability includes any increased costs incurred by the Government in completing the work.

(b) The Contractor's right to proceed shall not be terminated nor the Contractor charged with damages under this clause, if--

(1) The delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include

- (i) acts of God or of the public enemy,
- (ii) acts of the Government in either its sovereign or contractual capacity,
- (iii) acts of another Contractor in the performance of a contract with the Government,
- (iv) fires,
- (v) floods,
- (vi) epidemics,
- (vii) quarantine restrictions,
- (viii) strikes,

(ix) freight embargoes,

(x) unusually severe weather, or delays of subcontractors or suppliers at any tier arising from unforeseeable causes beyond the control and without the fault or negligence of both the Contractor and the subcontractors or suppliers; and

(2) The Contractor, within 10 days from the beginning of any delay (unless extended by the Contracting Officer), notifies the Contracting Officer in writing of the causes of delay. The Contracting Officer shall ascertain the facts and the extent of delay. If, in the judgment of the Contracting Officer, the findings of fact warrant such action, the time for completing the work shall be extended. The findings of the Contracting Officer shall be final and conclusive on the parties, but subject to appeal under the Disputes clause.

(c) If, after termination of the Contractor's right to proceed, it is determined that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the termination had been issued for the convenience of the Government.

The rights and remedies of the Government in this clause are in addition to any other rights and remedies provided by law or under this contract.

(End of clause)

#### 52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

<http://www.arnet.gov.far>

<http://farsite.hil.af.mil>

<http://www.dtic.mil.dfars>

(End of clause)

#### 52.252-4 ALTERATIONS IN CONTRACT (APR 1984)

Portions of this contract are altered as follows:

(End of clause)

#### 52.252-6 AUTHORIZED DEVIATIONS IN CLAUSES (APR 1984)

(a) The use in this solicitation or contract of any Federal Acquisition Regulation (48 CFR Chapter 1) clause with an authorized deviation is indicated by the addition of "(DEVIATION)" after the date of the clause.

(4) The use in this solicitation or contract of any \_\_\_\_\_ (48 CFR \_\_\_\_\_) clause with an authorized deviation is indicated by the addition of "(DEVIATION)" after the name of the regulation.

#### 52.253-1 COMPUTER GENERATED FORMS (JAN 1991)

(a) Any data required to be submitted on a Standard or Optional Form prescribed by the Federal Acquisition Regulation (FAR) may be submitted on a computer generated version of the form, provided there is no change to the name, content, or sequence of the data elements on the form, and provided the form carries the Standard or Optional Form number and edition date.

(b) Unless prohibited by agency regulations, any data required to be submitted on an agency unique form prescribed by an agency supplement to the FAR may be submitted on a computer generated version of the form provided there is no change to the name, content, or sequence of the data elements on the form and provided the form carries the agency form number and edition date.

(5) If the Contractor submits a computer generated version of a form that is different than the required form, then the rights and obligations of the parties will be determined based on the content of the required form.

(End of clause)

#### 252.201-7000 CONTRACTING OFFICER'S REPRESENTATIVE (DEC 1991)

(a) "Definition. Contracting officer's representative" means an individual designated in accordance with subsection 201.602-2 of the Defense Federal Acquisition Regulation Supplement and authorized in writing by the contracting officer to perform specific technical or administrative functions.

(b) If the Contracting Officer designates a contracting officer's representative (COR), the Contractor will receive a copy of the written designation. It will specify the extent of the COR's authority to act on behalf of the contracting officer. The COR is not authorized to make any commitments or changes that will affect price, quality, quantity, delivery, or any other term or condition of the contract.

(End of clause)

#### 252.203-7001 PROHIBITION ON PERSONS CONVICTED OF FRAUD OR OTHER DEFENSE- CONTRACT-RELATED FELONIES (MAR 1999)

(a) Definitions. As used in this clause—

(1) "Arising out of a contract with the DoD" means any act in connection with—

(i) Attempting to obtain;

(ii) Obtaining, or

(iii) Performing a contract or first-tier subcontract of any agency, department, or component of the Department of Defense (DoD).

(2) "Conviction of fraud or any other felony" means any conviction for fraud or a felony in violation of state or Federal criminal statutes, whether entered on a verdict or plea, including a plea of *nolo contendere*, for which sentence has been imposed.

(3) "Date of conviction" means the date judgment was entered against the individual.

(b) Any individual who is convicted after September 29, 1988, of fraud or any other felony arising out of a contract with the DoD is prohibited from serving--

(1) In a management or supervisory capacity on any DoD contract or first-tier subcontract;

(2) On the board of directors of any DoD contractor or first-tier subcontractor;

(3) As a consultant, agent, or representative for any DoD contractor or first-tier subcontractor; or

(4) In any other capacity with the authority to influence, advise, or control the decisions of any DoD contractor or subcontractor with regard to any DoD contract or first-tier subcontract.

(c) Unless waived, the prohibition in paragraph (b) of this clause applies for not less than 5 years from the date of conviction.

(d) 10 U.S.C. 2408 provides that a defense contractor or first-tier subcontractor shall be subject to a criminal penalty of not more than \$500,000 if convicted of knowingly—

- (1) Employing a person under a prohibition specified in paragraph (b) of this clause; or
- (2) Allowing such a person to serve on the board of directors of the contractor or first-tier subcontractor.

(e) In addition to the criminal penalties contained in 10 U.S.C. 2408, the Government may consider other available remedies, such as—

- (1) Suspension or debarment;
- (2) Cancellation of the contract at no cost to the Government; or
- (3) Termination of the contract for default.

(f) The Contractor may submit written requests for waiver of the prohibition in paragraph (b) of this clause to the Contracting Officer. Requests shall clearly identify—

- (1) The person involved;
- (2) The nature of the conviction and resultant sentence or punishment imposed;
- (3) The reasons for the requested waiver; and
- (4) An explanation of why a waiver is in the interest of national security.

(g) The Contractor agrees to include the substance of this clause, appropriately modified to reflect the identity and relationship of the parties, in all first-tier subcontracts exceeding the simplified acquisition threshold in Part 2 of the Federal Acquisition Regulation, except those for commercial items or components.

(h) Pursuant to 10 U.S.C. 2408(c), defense contractors and subcontractors may obtain information as to whether a particular person has been convicted of fraud or any other felony arising out of a contract with the DoD by contacting The Office of Justice Programs, The Denial of Federal Benefits Office, U.S. Department of Justice, telephone (202) 616-3507.

(End of clause)

#### 252.203-7002 DISPLAY OF DOD HOTLINE POSTER (DEC 1991)

(a) The Contractor shall display prominently in common work areas within business segments performing work under Department of Defense (DoD) contracts, DoD Hotline Posters prepared by the DoD Office of the Inspector General.

(b) DoD Hotline Posters may be obtained from the DoD Inspector General, ATTN: Defense Hotline, 400 Army Navy Drive, Washington, DC 22202-2884.



(6) The Contractor need not comply with paragraph (a) of this clause if it has established a mechanism, such as a hotline, by which employees may report suspected instances of improper conduct, and instructions that encourage employees to make such reports.

(End of clause)

#### 252.204-7000 DISCLOSURE OF INFORMATION (DEC 1991)

(a) The Contractor shall not release to anyone outside the Contractor's organization any unclassified information, regardless of medium (e.g., film, tape, document), pertaining to any part of this contract or any program related to this contract, unless--

(1) The Contracting Officer has given prior written approval; or

(2) The information is otherwise in the public domain before the date of release.

(b) Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.

(c) The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.

(End of clause)

#### 252.204-7003 CONTROL OF GOVERNMENT PERSONNEL WORK PRODUCT (APR 1992)

The Contractor's procedures for protecting against unauthorized disclosure of information shall not require Department of Defense employees or members of the Armed Forces to relinquish control of their work products, whether classified or not, to the contractor.

(End of clause)

#### 252.205-7000 PROVISION OF INFORMATION TO COOPERATIVE AGREEMENT HOLDERS (DEC 1991)

(a) Definition.

"Cooperative agreement holder" means a State or local government; a private, nonprofit organization; a tribal organization (as defined in section 4(c) of the Indian Self-Determination and Education Assistance Act (Pub. L. 93-268; 25 U.S.C. 450 (c))); or an economic enterprise (as defined in section 3(e) of the Indian Financing Act of 1974 (Pub. L. 93-362; 25 U.S.C. 1452(e))) whether such economic enterprise is organized for profit or nonprofit purposes; which has an agreement with the Defense Logistics Agency to furnish procurement technical assistance to business entities.

(b) The Contractor shall provide cooperative agreement holders, upon their request, with a list of those appropriate employees or offices responsible for entering into subcontracts under defense contracts. The list shall include the business address, telephone number, and area of responsibility of each employee or office.

(c) The Contractor need not provide the listing to a particular cooperative agreement holder more frequently than once a year.

(End of clause)

**252.209-7000 ACQUISITION FROM SUBCONTRACTORS SUBJECT TO ONSITE INSPECTION UNDER THE INTERMEDIATE-RANGE NUCLEAR FORCES (INF) TREATY (NOV 1995)**

(a) The Contractor shall not deny consideration for a subcontract award under this contract to a potential subcontractor subject to on-site inspection under the INF Treaty, or a similar treaty, solely or in part because of the actual or potential presence of Soviet inspectors at the subcontractor's facility, unless the decision is approved by the Contracting Officer.

(b) The Contractor shall incorporate this clause, including this paragraph (b), in all solicitations and contracts exceeding the simplified acquisition threshold in part 13 of the Federal Acquisition Regulation, except those for commercial items.

(End of clause)

**252.223-7004 DRUG-FREE WORK FORCE (SEP 1988)**

(a) Definitions.

(1) "Employee in a sensitive position," as used in this clause, means an employee who has been granted access to classified information; or employees in other positions that the Contractor determines involve national security; health or safety, or functions other than the foregoing requiring a high degree of trust and confidence.

(2) "Illegal drugs," as used in this clause, means controlled substances included in Schedules I and II, as defined by section 802(6) of title 21 of the United States Code, the possession of which is unlawful under chapter 13 of that Title. The term "illegal drugs" does not mean the use of a controlled substance pursuant to a valid prescription or other uses authorized by law.

(b) The Contractor agrees to institute and maintain a program for achieving the objective of a drug-free work force. While this clause defines criteria for such a program, contractors are encouraged to implement alternative approaches comparable to the criteria in paragraph (c) that are designed to achieve the objectives of this clause.

(c) Contractor programs shall include the following, or appropriate alternatives:

(1) Employee assistance programs emphasizing high level direction, education, counseling, rehabilitation, and coordination with available community resources;

(2) Supervisory training to assist in identifying and addressing illegal drug use by Contractor employees;

(3) Provision for self-referrals as well as supervisory referrals to treatment with maximum respect for individual confidentiality consistent with safety and security issues;

(4) Provision for identifying illegal drug users, including testing on a controlled and carefully monitored basis. Employee drug testing programs shall be established taking account of the following:

(i) The Contractor shall establish a program that provides for testing for the use of illegal drugs by employees in sensitive positions. The extent of and criteria for such testing shall be determined by the Contractor based on considerations that include the nature of the work being performed under the contract, the employee's duties, and efficient use of Contractor resources, and the risks to health, safety, or national security that could result from the failure of an employee adequately to discharge his or her position.

(ii) In addition, the Contractor may establish a program for employee drug testing--

(A) When there is a reasonable suspicion that an employee uses illegal drugs; or

(B) When an employees has been involved in an accident or unsafe practice;

(C) As part of or as a follow-up to counseling or rehabilitation for illegal drug use;

(D) As part of a voluntary employee drug testing program.

(iii) The Contractor may establish a program to test applicants for employment for illegal drug use.

(iv) For the purpose of administering this clause, testing for illegal drugs may be limited to those substances for which testing is prescribed by section 2..1 of subpart B of the "Mandatory Guidelines for Federal Workplace Drug Testing Programs" (53 FR 11980 (April 11, 1988), issued by the Department of Health and Human Services.

(d) Contractors shall adopt appropriate personnel procedures to deal with employees who are found to be using drugs illegally. Contractors shall not allow any employee to remain on duty or perform in a sensitive position who is found to use illegal drugs until such times as the Contractor, in accordance with procedures established by the Contractor, determines that the employee may perform in such a position.

(e) The provisions of this clause pertaining to drug testing program shall not apply to the extent that are inconsistent with state or local law, or with an existing collective bargaining agreement; provided that with respect to the latter, the Contractor agrees those issues that are in conflict will be a subject of negotiation at the next collective bargaining session.

(End of clause)

#### 252.225-7012 Preference for Certain Domestic Commodities (APR 2002)

(a) Definitions. As used in this clause--

(1) Component means any item supplied to the Government as part of an end product or of another component.

(2) End product means supplies delivered under a line item of this contract.

(b) The Contractor shall deliver under this contract only such of the following items, either as end products or components, that have been grown, reprocessed, reused, or produced in the United States, its possessions, or Puerto Rico:

(1) Food.

(2) Clothing.

(3) Tents, tarpaulins, or covers.

(4) Cotton and other natural fiber products.

(5) Woven silk or woven silk blends.

(6) Spun silk yarn for cartridge cloth.

(7) Synthetic fabric, and coated synthetic fabric, including all textile fibers and yarns that are for use in such fabrics.

(8) Canvas products.

(9) Wool (whether in the form of fiber or yarn or contained in fabrics, materials, or manufactured articles).

(10) Any item of individual equipment (Federal Supply Class 8465) manufactured from or containing fibers, yarns, fabrics, or materials listed in this paragraph (b).

(c) This clause does not apply--

(1) To items listed in section 25.104(a) of the Federal Acquisition Regulation (FAR), or other items for which the Government has determined that a satisfactory quality and sufficient quantity cannot be acquired as and when needed at U.S. market prices;

(2) To end products incidentally incorporating cotton, other natural fibers, or wool, for which the estimated value of the cotton, other natural fibers, or wool--

(i) Is not more than 10 percent of the total price of the end product; and (ii) Does not exceed the simplified acquisition threshold in FAR part 2;

(3) To foods that have been manufactured or processed in the United States, its possessions, or Puerto Rico, regardless of where the foods (and any component if applicable) were grown or produced;

(4) To chemical warfare protective clothing produced in the countries listed in subsection 225.872-1 of the Defense FAR Supplement; or

(5) To fibers and yarns that are for use in synthetic fabric or coated synthetic fabric (but does apply to the synthetic or coated synthetic fabric itself), if--

(i) The fabric is to be used as a component of an end product that is not a textile product. Examples of textile products, made in whole or in part of fabric, include--

(A) Draperies, floor coverings, furnishings, and bedding (Federal Supply Group 72, Household and Commercial Furnishings and Appliances);

(B) Items made in whole or in part of fabric in Federal Supply Group 83, Textile/leather/furs/apparel/findings/ tents/flags, or Federal Supply Group 84, Clothing, Individual Equipment and Insignia;

(C) Upholstered seats (whether for household, office, or other use); and

(D) Parachutes (Federal Supply Class 1670); or

(ii) The fibers and yarns are para-aramid fibers and yarns manufactured in the Netherlands.

(End of clause)

#### 252.225-7031 SECONDARY ARAB BOYCOTT OF ISRAEL (JUN 1992)

(a) Definitions. As used in this clause--

(1) "Foreign person" means any person other than a United States person as defined in Section 16(2) of the Export Administration Act of 1979 (50 U.S.C. App. Sec 2415).

(2) "United States person" is defined in Section 16(2) of the Export Administration Act of 1979 and means any United States resident or national (other than an individual resident outside the United States and employed by other than a United States person), any domestic concern (including any permanent domestic establishment of any foreign concern), and any foreign subsidiary or affiliate (including any permanent

foreign establishment) of any domestic concern which is controlled in fact by such domestic concerns, as determined under regulations of the President.

(b) Certification. By submitting this offer, the Offeror, if a foreign person, company or entity, certifies that it--

(1) Does not comply with the Secondary Arab Boycott of Israel; and

(2) Is not taking or knowingly agreeing to take any action, with respect to the Secondary Boycott of Israel by Arab countries, which 50 U.S.C. App. Sec 2407(a) prohibits a United States person from taking.

(End of clause)

252.227-7000 Non-estoppel. (OCT 1966)

The Government reserves the right at any time to contest the enforceability, validity, scope of, or the title to any patent or patent application herein licensed without waiving or forfeiting any right under this contract.

(End of clause)

252.227-7022 GOVERNMENT RIGHTS (UNLIMITED) (MAR 1979)

The Government shall have unlimited rights, in all drawings, designs, specifications, notes and other works developed in the performance of this contract, including the right to use same on any other Government design or construction without additional compensation to the Contractor. The Contractor hereby grants to the Government a paid-up license throughout the world to all such works to which he may assert or establish any claim under design patent or copyright laws. The Contractor for a period of three (3) years after completion of the project agrees to furnish the original or copies of all such works on the request of the Contracting Officer.

(End of clause)

252.227-7023 DRAWINGS AND OTHER DATA TO BECOME PROPERTY OF GOVERNMENT. (MAR 1979)

All designs, drawings, specifications, notes and other works developed in the performance of this contract shall become the sole property of the Government and may be used on any other design or construction without additional compensation to the Contractor. The Government shall be considered the "person for whom the work was prepared" for the purpose of authorship in any copyrightable work under 17 U.S.C. 201(b). With respect thereto, the Contractor agrees not to assert or authorize others to assert any rights nor establish any claim under the design patent or copyright laws. The Contractor for a period of three (3) years after completion of the project agrees to furnish all retained works on the request of the Contracting Officer. Unless otherwise provided in this contract, the Contractor shall have the right to retain copies of all works beyond such period.

(End of clause)

252.227-7033 RIGHTS IN SHOP DRAWINGS (APR 1966)

(a) Shop drawings for construction means drawings, submitted to the Government by the Construction Contractor, subcontractor or any lower-tier subcontractor pursuant to a construction contract, showing in detail (i) the proposed fabrication and assembly of structural elements and (ii) the installation (i.e., form, fit, and attachment details) of materials or equipment. The Government may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.

(b) This clause, including this paragraph (b), shall be included in all subcontracts hereunder at any tier.

## 252.231-7000 SUPPLEMENTAL COST PRINCIPLES (DEC 1991)

When the allowability of costs under this contract is determined in accordance with part 31 of the Federal Acquisition Regulation (FAR), allowability shall also be determined in accordance with part 231 of the Defense FAR Supplement, in effect on the date of this contract.

(End of clause)

## 252.236-7000 MODIFICATION PROPOSALS - PRICE BREAKDOWN. (DEC 1991)

(a) The Contractor shall furnish a price breakdown, itemized as required and within the time specified by the Contracting Officer, with any proposal for a contract modification.

(b) The price breakdown --

(1) Must include sufficient detail to permit an analysis of profit, and of all costs for --

(i) Material;

(ii) Labor;

(iii) Equipment;

(iv) Subcontracts; and

(v) Overhead; and

(2) Must cover all work involved in the modification, whether the work was deleted, added, or changed.

(c) The Contractor shall provide similar price breakdowns to support any amounts claimed for subcontracts.

(d) The Contractor's proposal shall include a justification for any time extension proposed.

## 252.236-7008 CONTRACT PRICES - BIDDING SCHEDULES. (DEC 1991)

(a) The Government's payment for the items listed in the Bidding Schedule shall constitute full compensation to the Contractor for --

(1) Furnishing all plant, labor, equipment, appliances, and materials; and

(2) Performing all operations required to complete the work in conformity with the drawings and specifications.

(b) The Contractor shall include in the prices for the items listed in the Bidding Schedule all costs for work in the specifications, whether or not specifically listed in the Bidding Schedule.

## 252.242-7000 POSTAWARD CONFERENCE (DEC 1991)

The Contractor agrees to attend any postaward conference convened by the contracting activity or contract administration office in accordance with Federal Acquisition Regulation subpart 42.5.

(End of clause)

## 252.243-7001 PRICING OF CONTRACT MODIFICATIONS (DEC 1991)

When costs are a factor in any price adjustment under this contract, the contract cost principles and procedures in FAR part 31 and DFARS part 231, in effect on the date of this contract, apply.

## 252.243-7002 REQUESTS FOR EQUITABLE ADJUSTMENT (MAR 1998)

(a) The amount of any request for equitable adjustment to contract terms shall accurately reflect the contract adjustment for which the Contractor believes the Government is liable. The request shall include only costs for performing the change, and shall not include any costs that already have been reimbursed or that have been separately claimed. All indirect costs included in the request shall be properly allocable to the change in accordance with applicable acquisition regulations.

(b) In accordance with 10 U.S.C. 2410(a), any request for equitable adjustment to contract terms that exceeds the simplified acquisition threshold shall bear, at the time of submission, the following certificate executed by an individual authorized to certify the request on behalf of the Contractor:

I certify that the request is made in good faith, and that the supporting data are accurate and complete to the best of my knowledge and belief.

-----  
(Official's Name)

-----  
(Title)

(c) The certification in paragraph (b) of this clause requires full disclosure of all relevant facts, including--

(1) Cost or pricing data if required in accordance with subsection 15.403-4 of the Federal Acquisition Regulation (FAR); and

(2) Information other than cost or pricing data, in accordance with subsection 15.403-3 of the FAR, including actual cost data and data to support any estimated costs, even if cost or pricing data are not required.

(d) The certification requirement in paragraph (b) of this clause does not apply to---

(1) Requests for routine contract payments; for example, requests for payment for accepted supplies and services, routine vouchers under a cost-reimbursement type contract, or progress payment invoices; or

(2) Final adjustment under an incentive provision of the contract.

## 252.247-7024 Notification of Transportation of Supplies by Sea (MAR 2000)

(a) The Contractor has indicated by the response to the solicitation provision, Representation of Extent of Transportation by Sea, that it did not anticipate transporting by sea any supplies. If, however, after the award of this contract, the Contractor learns that supplies, as defined in the Transportation of Supplies by Sea clause of this contract, will be transported by sea, the Contractor --

(1) Shall notify the Contracting Officer of that fact; and

(2) Hereby agrees to comply with all the terms and conditions of the Transportation of Supplies by Sea clause of this contract.

(b) The Contractor shall include this clause; including this paragraph (b), revised as necessary to reflect the relationship of the contracting parties--

- (1) In all subcontracts under this contract, if this contract is a construction contract; or
  - (2) If this contract is not a construction contract, in all subcontracts under this contract that are for--
    - (i) Noncommercial items; or
    - (ii) Commercial items that--
      - (A) The Contractor is reselling or distributing to the Government without adding value (generally, the Contractor does not add value to items that it subcontracts for f.o.b. destination shipment);
      - (B) Are shipped in direct support of U.S. military contingency operations, exercises, or forces deployed in humanitarian or peacekeeping operations; or
      - (C) Are commissary or exchange cargoes transported outside of the Defense Transportation System in accordance with 10 U.S.C. 2643.
- (End of clause)



**Section 00800**  
**Special Contract Requirements**

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CLAUSES INCORPORATED BY FULL TEXT

52.0001-4001 CONTRACT ADMINISTRATION DATA

The Contract Administration Office for this contract subsequent to award is:

Department of the Army  
Los Angeles District, Corps of Engineers  
P.O. Box 532711  
Los Angeles, California 90053-2325

ATTN: Kevin Thomas

Telephone No: 858/674-6767

Payment will be made by:

USACE Finance Center  
ATTN: CEFC-AO-P  
5270 Integrity Drive  
Millington, TN 38054-5005

Submit Invoices to:

Refer to Block No. 26 of the Standard Form 1442, "Solicitation, Offer and Award" which will be completed at time of contract award.

52.211-10 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984)

The Contractor shall be required to provide performance and payment bonds within 7 days of award.

The Contractor shall be required to (a) commence work under this contract within 10 calendar days after the date the Contractor receives the notice to proceed, (b) prosecute the work diligently, and (c) complete the entire work ready for use not later than 365 days after the contractor receives the Notice to Proceed. \* The time stated for completion shall include final cleanup of the premises.

\*The Contracting Officer shall specify either a number of days after the date the contractor receives the notice to proceed, or a calendar date.

(End of clause)

52.211-12 LIQUIDATED DAMAGES--CONSTRUCTION (SEP 2000)

(a) If the Contractor fails to complete the work within the time specified in the contract, the Contractor shall pay liquidated damages to the Government in the amount of \$1,350.00 for each calendar day of delay until the work is completed or accepted.

(b) If the Government terminates the Contractor's right to proceed, liquidated damages will continue to accrue until the work is completed. These liquidated damages are in addition to excess costs of repurchase under the Termination clause.

(End of clause)

52.211-18 VARIATION IN ESTIMATED QUANTITY (APR 1984)

If the quantity of a unit-priced item in this contract is an estimated quantity and the actual quantity of the unit-priced item varies more than 15 percent above or below the estimated quantity, an equitable adjustment in the contract price shall be made upon demand of either party. The equitable adjustment shall be based upon any increase or decrease in costs due solely to the variation above 115 percent or below 85 percent of the estimated quantity. If the quantity variation is such as to cause an increase in the time necessary for completion, the Contractor may request, in writing, an extension of time, to be received by the Contracting Officer within 10 days from the beginning of the delay, or within such further period as may be granted by the Contracting Officer before the date of final settlement of the contract. Upon the receipt of a written request for an extension, the Contracting Officer shall ascertain the facts and make an adjustment for extending the completion date as, in the judgement of the Contracting Officer, is justified.

52.222-23 NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (FEB 1999)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation for each trade	Goals for female participation for each trade
19.7%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the --

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and

(5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is

**Riverside County, California**

(End of provision)

#### 52.228-14 IRREVOCABLE LETTER OF CREDIT (DEC 1999)

(a) "Irrevocable letter of credit" (ILC), as used in this clause, means a written commitment by a federally insured financial institution to pay all or part of a stated amount of money, until the expiration date of the letter, upon presentation by the Government (the beneficiary) of a written demand therefor. Neither the financial institution nor the offeror/Contractor can revoke or condition the letter of credit.

(b) If the offeror intends to use an ILC in lieu of a bid bond, or to secure other types of bonds such as performance and payment bonds, the letter of credit and letter of confirmation formats in paragraphs (e) and (f) of this clause shall be used.

(c) The letter of credit shall be irrevocable, shall require presentation of no document other than a written demand and the ILC (including confirming letter, if any), shall be issued/confirmed by an acceptable federally insured financial institution as provided in paragraph (d) of this clause, and--

(1) If used as a bid guarantee, the ILC shall expire no earlier than 60 days after the close of the bid acceptance period;

(2) If used as an alternative to corporate or individual sureties as security for a performance or payment bond, the offeror/Contractor may submit an ILC with an initial expiration date estimated to cover the entire period for which financial security is required or may submit an ILC with an initial expiration date that is a minimum period of one year from the date of issuance. The ILC shall provide that, unless the issuer provides the beneficiary written notice of non-renewal at least 60 days in advance of the current expiration date, the ILC is automatically extended without amendment for one year from the expiration date, or any future expiration date, until the period of required coverage is completed and the Contracting Officer provides the financial institution with a written statement waiving the right to payment. The period of required coverage shall be:

(i) For contracts subject to the Miller Act, the later of--

(A) One year following the expected date of final payment;

(B) For performance bonds only, until completion of any warranty period; or

(C) For payment bonds only, until resolution of all claims filed against the payment bond during the one-year period following final payment.

(ii) For contracts not subject to the Miller Act, the later of--

(A) 90 days following final payment; or

(B) For performance bonds only, until completion of any warranty period.

(d) Only federally insured financial institutions rated investment grade or higher shall issue or confirm the ILC. The offeror/Contractor shall provide the Contracting Officer a credit rating that indicates the financial institution has the required rating(s) as of the date of issuance of the ILC. Unless the financial institution issuing the ILC had letter of

credit business of less than \$25 million in the past year, ILCs over \$5 million must be confirmed by another acceptable financial institution that had letter of credit business of less than \$25 million in the past year.

(e) The following format shall be used by the issuing financial institution to create an ILC:

\_\_\_\_\_  
[Issuing Financial Institution's Letterhead or Name and Address]

Issue Date \_\_\_\_\_

IRREVOCABLE LETTER OF CREDIT NO. \_\_\_\_\_

Account party's name \_\_\_\_\_

Account party's address \_\_\_\_\_

For Solicitation No. \_\_\_\_\_ (for reference only)

TO: [U.S. Government agency]

[U.S. Government agency's address]

1. We hereby establish this irrevocable and transferable Letter of Credit in your favor for one or more drawings up to United States \$ \_\_\_\_\_. This Letter of Credit is payable at [issuing financial institution's and, if any, confirming financial institution's] office at [issuing financial institution's address and, if any, confirming financial institution's address] and expires with our close of business on \_\_\_\_\_, or any automatically extended expiration date.

2. We hereby undertake to honor your or the transferee's sight draft(s) drawn on the issuing or, if any, the confirming financial institution, for all or any part of this credit if presented with this Letter of Credit and confirmation, if any, at the office specified in paragraph 1 of this Letter of Credit on or before the expiration date or any automatically extended expiration date.

3. [This paragraph is omitted if used as a bid guarantee, and subsequent paragraphs are renumbered.] It is a condition of this Letter of Credit that it is deemed to be automatically extended without amendment for one year from the expiration date hereof, or any future expiration date, unless at least 60 days prior to any expiration date, we notify you or the transferee by registered mail, or other receipted means of delivery, that we elect not to consider this Letter of Credit renewed for any such additional period. At the time we notify you, we also agree to notify the account party (and confirming financial institution, if any) by the same means of delivery.

4. This Letter of Credit is transferable. Transfers and assignments of proceeds are to be effected without charge to either the beneficiary or the transferee/assignee of proceeds. Such transfer or assignment shall be only at the written direction of the Government (the beneficiary) in a form satisfactory to the issuing financial institution and the confirming financial institution, if any.

5. This Letter of Credit is subject to the Uniform Customs and Practice (UCP) for Documentary Credits, 1993 Revision, International Chamber of Commerce Publication No. 500, and to the extent not inconsistent therewith, to the laws of \_\_\_\_\_ [state of confirming financial institution, if any, otherwise state of issuing financial institution].

6. If this credit expires during an interruption of business of this financial institution as described in Article 17 of the UCP, the financial institution specifically agrees to effect payment if this credit is drawn against within 30 days after the resumption of our business.

Sincerely,

\_\_\_\_\_  
[Issuing financial institution]

(f) The following format shall be used by the financial institution to confirm an ILC:

\_\_\_\_\_  
[Confirming Financial Institution's Letterhead or Name and Address]

(Date) \_\_\_\_\_

Our Letter of Credit Advice Number \_\_\_\_\_

Beneficiary: \_\_\_\_\_ [U.S. Government agency]

Issuing Financial Institution: \_\_\_\_\_

Issuing Financial Institution's LC No.: \_\_\_\_\_

Gentlemen:

1. We hereby confirm the above indicated Letter of Credit, the original of which is attached, issued by \_\_\_\_\_ [name of issuing financial institution] for drawings of up to United States dollars \_\_\_\_\_/U.S. \$ \_\_\_\_\_ and expiring with our close of business on \_\_\_\_\_ [the expiration date], or any automatically extended expiration date.

2. Draft(s) drawn under the Letter of Credit and this Confirmation are payable at our office located at \_\_\_\_\_.

3. We hereby undertake to honor sight draft(s) drawn under and presented with the Letter of Credit and this Confirmation at our offices as specified herein.

4. [This paragraph is omitted if used as a bid guarantee, and subsequent paragraphs are renumbered.] It is a condition of this confirmation that it be deemed automatically extended without amendment for one year from the expiration date hereof, or any automatically extended expiration date, unless:

(a) At least 60 days prior to any such expiration date, we shall notify the Contracting Officer, or the transferee and the issuing financial institution, by registered mail or other receipted means of delivery, that we elect not to consider this confirmation extended for any such additional period; or

(b) The issuing financial institution shall have exercised its right to notify you or the transferee, the account party, and ourselves, of its election not to extend the expiration date of the Letter of Credit.

5. This confirmation is subject to the Uniform Customs and Practice (UCP) for Documentary Credits, 1993 Revision, International Chamber of Commerce Publication No. 500, and to the extent not inconsistent therewith, to the laws of \_\_\_\_\_ [state of confirming financial institution].

6. If this confirmation expires during an interruption of business of this financial institution as described in Article 17 of the UCP, we specifically agree to effect payment if this credit is drawn against within 30 days after the resumption of our business.

Sincerely,

\_\_\_\_\_  
[Confirming financial institution]

(g) The following format shall be used by the Contracting Officer for a sight draft to draw on the Letter of Credit:

SIGHT DRAFT

\_\_\_\_\_

[City, State]

(Date) \_\_\_\_\_

[Name and address of financial institution]

Pay to the order of \_\_\_\_\_ [Beneficiary Agency] \_\_\_\_\_ the sum of United States \$ \_\_\_\_\_.  
This draft is drawn under Irrevocable Letter of Credit No. \_\_\_\_\_.

\_\_\_\_\_

[Beneficiary Agency]

By: \_\_\_\_\_

(End of clause)

52.228-15 Performance and Payment Bonds--Construction (JUL 2000)-

(a) Definitions. As used in this clause--

Original contract price means the award price of the contract; or, for requirements contracts, the price payable for the estimated total quantity; or, for indefinite-quantity contracts, the price payable for the specified minimum quantity. Original contract price does not include the price of any options, except those options exercised at the time of contract award.

(b) Amount of required bonds. Unless the resulting contract price is \$100,000 or less, the successful offeror shall furnish performance and payment bonds to the Contracting Officer as follows:

(1) Performance bonds (Standard Form 25). The penal amount of performance bonds at the time of contract award shall be 100 percent of the original contract price.

(2) Payment Bonds (Standard Form 25-A). The penal amount of payment bonds at the time of contract award shall be 100 percent of the original contract price.

(3) Additional bond protection. (i) The Government may require additional performance and payment bond protection if the contract price is increased. The increase in protection generally will equal 100 percent of the increase in contract price.

(ii) The Government may secure the additional protection by directing the Contractor to increase the penal amount of the existing bond or to obtain an additional bond.

(c) Furnishing executed bonds. The Contractor shall furnish all executed bonds, including any necessary reinsurance agreements, to the Contracting Officer, within the time period specified in the Bid Guarantee provision of the solicitation, or otherwise specified by the Contracting Officer, but in any event, before starting work.

(d) Surety or other security for bonds. The bonds shall be in the form of firm commitment, supported by corporate sureties whose names appear on the list contained in Treasury Department Circular 570, individual sureties, or by other acceptable security such as postal money order, certified check, cashier's check, irrevocable letter of credit, or,

in accordance with Treasury Department regulations, certain bonds or notes of the United States. Treasury Circular 570 is published in the Federal Register or may be obtained from the U.S. Department of Treasury, Financial Management Service, Surety Bond Branch, 401 14th Street, NW, 2nd Floor, West Wing, Washington, DC 20227.

(e) Notice of subcontractor waiver of protection (40 U.S.C. 270b(c)). Any waiver of the right to sue on the payment bond is void unless it is in writing, signed by the person whose right is waived, and executed after such person has first furnished labor or material for use in the performance of the contract.

(End of clause)

52.231-5000 EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE  
MAR 1995)--EFARS

(a) This clause does not apply to terminations. See 52.249-5000, Basis for Settlement of Proposals and FAR Part 49.

(b) Allowable cost for construction and marine plant and equipment in sound workable condition owned or controlled and furnished by a contractor or subcontractor at any tier shall be based on actual cost data for each piece of equipment or groups of similar serial and series for which the Government can determine both ownership and operating costs from the contractor's accounting records. When both ownership and operating costs cannot be determined for any piece of equipment or groups of similar serial or series equipment from the contractor's accounting records, costs for that equipment shall be based upon the applicable provisions of EP 1110-1-8, Construction Equipment Ownership and Operating Expense Schedule, Region \_\_\_\_\_. Working conditions shall be considered to be average for determining equipment rates using the schedule unless specified otherwise by the contracting officer. For equipment not included in the schedule, rates for comparable pieces of equipment may be used or a rate may be developed using the formula provided in the schedule. For forward pricing, the schedule in effect at the time of negotiations shall apply. For retroactive pricing, the schedule in effect at the time the work was performed shall apply.

(c) Equipment rental costs are allowable, subject to the provisions of FAR 31.105(d)(ii) and FAR 31.205-36. Rates for equipment rented from an organization under common control, lease-purchase arrangements, and sale-leaseback arrangements, will be determined using the schedule, except that actual rates will be used for equipment leased from an organization under common control that has an established practice of leasing the same or similar equipment to unaffiliated lessees.

(d) When actual equipment costs are proposed and the total amount of the pricing action exceeds the small purchase threshold, the contracting officer shall request the contractor to submit either certified cost or pricing data, or partial/limited data, as appropriate. The data shall be submitted on Standard Form 1411, Contract Pricing Proposal Cover Sheet.

(End of clause)

52.232-33 PAYMENT BY ELECTRONIC FUNDS TRANSFER—CENTRAL CONTRACTOR REGISTRATION  
(MAY 1999)

(a) Method of payment. (1) All payments by the Government under this contract shall be made by electronic funds transfer (EFT), except as provided in paragraph (a)(2) of this clause. As used in this clause, the term "EFT" refers to the funds transfer and may also include the payment information transfer.

(2) In the event the Government is unable to release one or more payments by EFT, the Contractor agrees to either--

(i) Accept payment by check or some other mutually agreeable method of payment; or

(ii) Request the Government to extend the payment due date until such time as the Government can make payment by EFT (but see paragraph (d) of this clause).

(b) Contractor's EFT information. The Government shall make payment to the Contractor using the EFT information contained in the Central Contractor Registration (CCR) database. In the event that the EFT information changes, the Contractor shall be responsible for providing the updated information to the CCR database.



(c) Mechanisms for EFT payment. The Government may make payment by EFT through either the Automated Clearing House (ACH) network, subject to the rules of the National Automated Clearing House Association, or the Fedwire Transfer System. The rules governing Federal payments through the ACH are contained in 31 CFR part 210.

(d) Suspension of payment. If the Contractor's EFT information in the CCR database is incorrect, then the Government need not make payment to the Contractor under this contract until correct EFT information is entered into the CCR database; and any invoice or contract financing request shall be deemed not to be a proper invoice for the purpose of prompt payment under this contract. The prompt payment terms of the contract regarding notice of an improper invoice and delays in accrual of interest penalties apply.

(e) Contractor EFT arrangements. If the Contractor has identified multiple payment receiving points (i.e., more than one remittance address and/or EFT information set) in the CCR database, and the Contractor has not notified the Government of the payment receiving point applicable to this contract, the Government shall make payment to the first payment receiving point (EFT information set or remittance address as applicable) listed in the CCR database.

(f) Liability for uncompleted or erroneous transfers. (1) If an uncompleted or erroneous transfer occurs because the Government used the Contractor's EFT information incorrectly, the Government remains responsible for--

- (i) Making a correct payment;
- (ii) Paying any prompt payment penalty due; and
- (iii) Recovering any erroneously directed funds.

(2) If an uncompleted or erroneous transfer occurs because the Contractor's EFT information was incorrect, or was revised within 30 days of Government release of the EFT payment transaction instruction to the Federal Reserve System, and--

- (i) If the funds are no longer under the control of the payment office, the Government is deemed to have made payment and the Contractor is responsible for recovery of any erroneously directed funds; or
- (ii) If the funds remain under the control of the payment office, the Government shall not make payment, and the provisions of paragraph (d) of this clause shall apply.

(g) EFT and prompt payment. A payment shall be deemed to have been made in a timely manner in accordance with the prompt payment terms of this contract if, in the EFT payment transaction instruction released to the Federal Reserve System, the date specified for settlement of the payment is on or before the prompt payment due date, provided the specified payment date is a valid date under the rules of the Federal Reserve System.

(h) EFT and assignment of claims. If the Contractor assigns the proceeds of this contract as provided for in the assignment of claims terms of this contract, the Contractor shall require as a condition of any such assignment, that the assignee shall register in the CCR database and shall be paid by EFT in accordance with the terms of this clause. In all respects, the requirements of this clause shall apply to the assignee as if it were the Contractor. EFT information that shows the ultimate recipient of the transfer to be other than the Contractor, in the absence of a proper assignment of claims acceptable to the Government, is incorrect EFT information within the meaning of paragraph (d) of this clause.

(i) Liability for change of EFT information by financial agent. The Government is not liable for errors resulting from changes to EFT information made by the Contractor's financial agent.

(j) Payment information. The payment or disbursing office shall forward to the Contractor available payment information that is suitable for transmission as of the date of release of the EFT instruction to the Federal Reserve System. The Government may request the Contractor to designate a desired format and method(s) for delivery of payment information from a list of formats and methods the payment office is capable of executing. However, the Government does not guarantee that any particular format or method of delivery is available at any particular

payment office and retains the latitude to use the format and delivery method most convenient to the Government. If the Government makes payment by check in accordance with paragraph (a) of this clause, the Government shall mail the payment information to the remittance address contained in the CCR database.

(End of Clause)

52.232-4001 CONTINUING CONTRACTS (ALTERNATE) (MAR 1995) EFARS 52-232-5002

(a) Funds are not available at the inception of this contract to cover the entire contract price. The sum of \$10,000 has been reserved for this contract and is available for payment to the contractor during the current fiscal year. It is expected that Congress will make appropriations for future fiscal years from which additional funds, together with funds provided by one or more non-federal project sponsors will be reserved for this contract. The liability of the United States for payment beyond the funds reserved for this contract is contingent on the reservation of additional funds.

(b) Failure to make payment in excess of the amount currently reserved, or that may be reserved from time to time, shall not be considered a breach of this contract, and shall not entitle the contractor to a price adjustment under the terms of this contract except as specifically provided in paragraphs (e) and (h) below.

(c) The Government may at any time reserve additional funds for payments under the contract if there are funds available for such purpose. The contracting officer will promptly notify the contractor of any additional funds reserved for the contract by issuing and administrative modification to the contract.

(d) If earnings will be such that funds reserved for the contract will be exhausted before the end of any fiscal year, the contractor shall give written notice to the contracting officer of the estimated date of exhaustion and of additional funds which will be needed to meet payments due or to become due under this contract during that fiscal year. This notice shall be given not less than 45 nor more than 60 days prior to the estimated date of exhaustion.

(e) No payments will be made after exhaustion of funds except to the extent that additional funds are reserved for the contract. If and when sufficient additional funds are reserved, the contractor shall be entitled to simple interest on any payment that the contracting officer determines was actually earned under the terms of this contract and would have been made except for exhaustion of funds. Interest shall be computed from the time such payment would otherwise have been made until actually or constructively made, and shall be at the rate established by the Secretary of the Treasury pursuant to Public Law 92-41, 85 Stat 97, as in effect on the first day of the delay in such payment.

(f) Any suspension, delay, or interruption of work arising from exhaustion or anticipated exhaustion of funds shall not constitute a breach of this contract and shall not entitle the contractor to any price adjustment under a "Suspension of Work" or similar clause or in any other manner under this contract.

(g) An equitable adjustment in performance time shall be made for any increase in the time required for performance of any part of the work arising from exhaustion of funds or the reasonable anticipation of exhaustion of funds.

(h) If, upon the expiration of sixty (60) days after the beginning of the fiscal year following an exhaustion of funds, the Government has failed to reserve sufficient additional funds to cover payments otherwise due, the contractor, by written notice delivered to the contracting officer at any time before such additional funds are reserved, may elect to treat his right to proceed with the work as having been terminated. Such a termination shall be at no cost to the Government, except that, to the extent that additional funds to make payment therefore are allocated to this contract, it may be treated as a termination for the convenience of the Government.

(i) If at any time it becomes apparent that the funds reserved for any fiscal year are in excess of the funds required to meet all payments due or to become due the contractor because of work performed and to be performed under this contract during the fiscal year, the Government reserves the right, after notice to the contractor, to reduce said reservation by the amount of such excess.

(j) The term "Reservation" means monies that have been set aside and made available for payments under this contract.

(End of clause)

52.236-4 PHYSICAL DATA (APR 1984)

Data and information furnished or referred to below is for the Contractor's information. The Government shall not be responsible for any interpretation of or conclusion drawn from the data or information by the Contractor.

- (a) The indications of physical conditions on the drawings and in the specifications are the result of site investigations by surveys and core borings.
- (b) Weather conditions. The contractor shall satisfy himself as to the hazards likely to arise from weather conditions.
- (c) Transportation facilities. The contractor shall make his own investigation of the conditions of existing public and private roads and clearances, restrictions, bridge load limits and other limitations affecting transportation and ingress and egress at the job site. The unavailability of transportation facilities or limitations thereof shall not become a basis for claims against the Government or extensions of time for completion of the work.
- (d) N/A

(End of clause)

#### 52.236-16 QUANTITY SURVEYS (APR 1984)

- (a) Quantity surveys shall be conducted, and the data derived from these surveys shall be used in computing the quantities of work performed and the actual construction completed and in place.
- (b) The Government shall conduct the original and final surveys and make the computations based on them. The Contractor shall conduct the surveys for any periods for which progress payments are requested and shall make the computations based on these surveys. All surveys conducted by the Contractor shall be conducted under the direction of a representative of the Contracting Officer, unless the Contracting Officer waives this requirement in a specific instance.
- (c) Promptly upon completing a survey, the Contractor shall furnish the originals of all field notes and all other records relating to the survey or to the layout of the work to the Contracting Officer, who shall use them as necessary to determine the amount of progress payments. The Contractor shall retain copies of all such material furnished to the Contracting Officer.

(End of clause)

#### 52.236-21 SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION (FEB 1997)

- (a) The Contractor shall keep on the work site a copy of the drawings and specifications and shall at all times give the Contracting Officer access thereto. Anything mentioned in the specifications and not shown on the drawings, or shown on the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both. In case of difference between drawings and specifications, the specifications shall govern. In case of discrepancy in the figures, in the drawings, or in the specifications, the matter shall be promptly submitted to the Contracting Officer, who shall promptly make a determination in writing. Any adjustment by the Contractor without such a determination shall be at its own risk and expense. The Contracting Officer shall furnish from time to time such detailed drawings and other information as considered necessary, unless otherwise provided.
- (b) Wherever in the specifications or upon the drawings the words "directed", "required", "ordered", "designated", "prescribed", or words of like import are used, it shall be understood that the "direction", "requirement", "order", "designation", or "prescription", of the Contracting Officer is intended and similarly the words "approved", "acceptable", "satisfactory", or words of like import shall mean "approved by," or "acceptable to", or "satisfactory to" the Contracting Officer, unless otherwise expressly stated.
- (c) Where "as shown," "as indicated", "as detailed", or words of similar import are used, it shall be understood that the reference is made to the drawings accompanying this contract unless stated otherwise. The word "provided" as used herein shall be understood to mean "provide complete in place," that is "furnished and installed".
- (d) Shop drawings means drawings, submitted to the Government by the Contractor, subcontractor, or any lower tier subcontractor pursuant to a construction contract, showing in detail (1) the proposed fabrication and assembly of

structural elements, and (2) the installation (i.e., fit, and attachment details) of materials or equipment. It includes drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, and similar materials furnished by the contractor to explain in detail specific portions of the work required by the contract. The Government may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.

(e) If this contract requires shop drawings, the Contractor shall coordinate all such drawings, and review them for accuracy, completeness, and compliance with contract requirements and shall indicate its approval thereon as evidence of such coordination and review. Shop drawings submitted to the Contracting Officer without evidence of the Contractor's approval may be returned for resubmission. The Contracting Officer will indicate an approval or disapproval of the shop drawings and if not approved as submitted shall indicate the Government's reasons therefor. Any work done before such approval shall be at the Contractor's risk. Approval by the Contracting Officer shall not relieve the Contractor from responsibility for any errors or omissions in such drawings, nor from responsibility for complying with the requirements of this contract, except with respect to variations described and approved in accordance with (f) below.

(f) If shop drawings show variations from the contract requirements, the Contractor shall describe such variations in writing, separate from the drawings, at the time of submission. If the Contracting Officer approves any such variation, the Contracting Officer shall issue an appropriate contract modification, except that, if the variation is minor or does not involve a change in price or in time of performance, a modification need not be issued.

(g) The Contractor shall submit to the Contracting Officer for approval four copies (unless otherwise indicated) of all shop drawings as called for under the various headings of these specifications. Three sets (unless otherwise indicated) of all shop drawings, will be retained by the Contracting Officer and one set will be returned to the Contractor.

(End of clause)

#### 52.236-5000 PLANT AND MATERIAL REMOVAL AFTER CONTRACT TERMINATION (MAR 1995)--EFARS

Should this contract be terminated as provided in clause 52.232-5001 because of the failure of Congress to provide additional funds for its completion, the contractor may be permitted to remove plant and material on which payments for preparatory work have been made, subject to an equitable deduction from the amounts due the contractor to reimburse the United States for the unabsorbed value of such plant and material.

(End of clause)

#### 52.249-5000 BASIS FOR SETTLEMENT OF PROPOSALS

Actual costs will be used to determine equipment costs for a settlement proposal submitted on the total cost basis under FAR 49.206-2(b). In evaluating a terminations settlement proposal using the total cost basis, the following principles will be applied to determine allowable equipment costs:

- (1) Actual costs for each piece of equipment, or groups of similar serial or series equipment, need not be available in the contractor's accounting records to determine total actual equipment costs.
- (2) If equipment costs have been allocated to a contract using predetermined rates, those charges will be adjusted to actual costs.
- (3) Recorded job costs adjusted for unallowable expenses will be used to determine equipment operating expenses.
- (4) Ownership costs (depreciation) will be determined using the contractor's depreciation schedule (subject to the provisions of FAR 31.205-11).
- (5) License, taxes, storage and insurance costs are normally recovered as an indirect expense and unless the contractor charges these costs directly to contracts, they will be recovered through the indirect expense rate.

(End of Clause)

#### 252.236-7001 CONTRACT DRAWINGS, MAPS, AND SPECIFICATIONS (AUG 2000)

(a) The Government will provide to the Contractor, without charge, one set of contract drawings and specifications, except publications incorporated into the technical provisions by reference, in electronic or paper media as chosen by the Contracting Officer.

(b) The Contractor shall--

- (1) Check all drawings furnished immediately upon receipt;
- (2) Compare all drawings and verify the figures before laying out the work;
- (3) Promptly notify the Contracting Officer of any discrepancies;
- (4) Be responsible for any errors that might have been avoided by complying with this paragraph (b); and
- (5) Reproduce and print contract drawings and specifications as needed.

(c) In general--

- (1) Large-scale drawings shall govern small-scale drawings; and
- (2) The Contractor shall follow figures marked on drawings in preference to scale measurements.
- (d) Omissions from the drawings or specifications or the misdescription of details of work that are manifestly necessary to carry out the intent of the drawings and specifications, or that are customarily performed, shall not relieve the Contractor from performing such omitted or misdescribed details of the work. The Contractor shall perform such details as if fully and correctly set forth and described in the drawings and specifications.
- (e) The work shall conform to the specifications and the contract drawings identified on the following index of drawings:

Title	File	Drawing No.
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(End of clause)

252.247-7023 Transportation of Supplies by Sea (MAY 2002)

(a) Definitions. As used in this clause --

- (1) "Components" means articles, materials, and supplies incorporated directly into end products at any level of manufacture, fabrication, or assembly by the Contractor or any subcontractor.
- (2) "Department of Defense" (DoD) means the Army, Navy, Air Force, Marine Corps, and defense agencies.
- (3) "Foreign flag vessel" means any vessel that is not a U.S.-flag vessel.
- (4) "Ocean transportation" means any transportation aboard a ship, vessel, boat, barge, or ferry through international waters.
- (5) "Subcontractor" means a supplier, materialman, distributor, or vendor at any level below the prime contractor whose contractual obligation to perform results from, or is conditioned upon, award of the prime contract and who is performing any part of the work or other requirement of the prime contract.
- (6) "Supplies" means all property, except land and interests in land, that is clearly identifiable for eventual use by or owned by the DoD at the time of transportation by sea.
  - (i) An item is clearly identifiable for eventual use by the DoD if, for example, the contract documentation contains a reference to a DoD contract number or a military destination.
  - (ii) "Supplies" includes (but is not limited to) public works; buildings and facilities; ships; floating equipment and

vessels of every character, type, and description, with parts, subassemblies, accessories, and equipment; machine tools; material; equipment; stores of all kinds; end items; construction materials; and components of the foregoing.

(7) "U.S.-flag vessel" means a vessel of the United States or belonging to the United States, including any vessel registered or having national status under the laws of the United States.

(b)(1) The Contractor shall use U.S.-flag vessels when transporting any supplies by sea under this contract.

(2) A subcontractor transporting supplies by sea under this contract shall use U.S.-flag vessels if--

(i) This contract is a construction contract; or

(ii) The supplies being transported are--

(A) Noncommercial items; or

(B) Commercial items that--

(1) The Contractor is reselling or distributing to the Government without adding value (generally, the Contractor does not add value to items that it contracts for f.o.b. destination shipment);

(2) Are shipped in direct support of U.S. military contingency operations, exercises, or forces deployed in humanitarian or peacekeeping operations; or

(3) Are commissary or exchange cargoes transported outside of the Defense Transportation System in accordance with 10 U.S.C. 2643.

(c) The Contractor and its subcontractors may request that the Contracting Officer authorize shipment in foreign-flag vessels, or designate available U.S.-flag vessels, if the Contractor or a subcontractor believes that --

(1) U.S.-flag vessels are not available for timely shipment;

(2) The freight charges are inordinately excessive or unreasonable; or

(3) Freight charges are higher than charges to private persons for transportation of like goods.

(d) The Contractor must submit any request for use of other than U.S.-flag vessels in writing to the Contracting Officer at least 45 days prior to the sailing date necessary to meet its delivery schedules. The Contracting Officer will process requests submitted after such date(s) as expeditiously as possible, but the Contracting Officer's failure to grant approvals to meet the shipper's sailing date will not of itself constitute a compensable delay under this or any other clause of this contract. Requests shall contain at a minimum --

(1) Type, weight, and cube of cargo;

(2) Required shipping date;

(3) Special handling and discharge requirements;

(4) Loading and discharge points;

(5) Name of shipper and consignee;

(6) Prime contract number; and

(7) A documented description of efforts made to secure U.S.-flag vessels, including points of contact (with names and telephone numbers) with at least two U.S.-flag carriers contacted. Copies of telephone notes, telegraphic and

facsimile message or letters will be sufficient for this purpose.

(e) The Contractor shall, within 30 days after each shipment covered by this clause, provide the Contracting Officer and the Maritime Administration, Office of Cargo Preference, U.S. Department of Transportation, 400 Seventh Street SW., Washington, DC 20590, one copy of the rated on board vessel operating carrier's ocean bill of lading, which shall contain the following information:

- (1) Prime contract number;
- (2) Name of vessel;
- (3) Vessel flag of registry;
- (4) Date of loading;
- (5) Port of loading;
- (6) Port of final discharge;
- (7) Description of commodity;
- (8) Gross weight in pounds and cubic feet if available;
- (9) Total ocean freight in U.S. dollars; and
- (10) Name of the steamship company.

(f) The Contractor shall provide with its final invoice under this contract a representation that to the best of its knowledge and belief--

- (1) No ocean transportation was used in the performance of this contract;
- (2) Ocean transportation was used and only U.S.-flag vessels were used for all ocean shipments under the contract;
- (3) Ocean transportation was used, and the Contractor had the written consent of the Contracting Officer for all non-U.S.-flag ocean transportation; or

(4) Ocean transportation was used and some or all of the shipments were made on non-U.S.-flag vessels without the written consent of the Contracting Officer. The Contractor shall describe these shipments in the following format:

ITEM DESCRIPTION	CONTRACT LINE ITEMS	QUANTITY
TOTAL		

(g) If the final invoice does not include the required representation, the Government will reject and return it to the Contractor as an improper invoice for the purposes of the Prompt Payment clause of this contract. In the event there has been unauthorized use of non-U.S.-flag vessels in the performance of this contract, the Contracting Officer is entitled to equitably adjust the contract, based on the unauthorized use.

(h) In the award of subcontracts for the types of supplies described in paragraph (b)(2) of this clause, the Contractor shall flow down the requirements of this clause as follows:

(1) The Contractor shall insert the substance of this clause, including this paragraph (h), in subcontracts that exceed the simplified acquisition threshold in part 2 of the Federal Acquisition Regulation.

(2) The Contractor shall insert the substance of paragraphs (a) through (e) of this clause, and this paragraph (h), in subcontracts that are at or below the simplified acquisition threshold in part 2 of the Federal Acquisition Regulation.

(End of clause)



DACW09-03-B-0006 Murrieta Creek Phase 1.txt

252.236-7001 CONTRACT DRAWINGS, MAPS AND SPECIFICATIONS (AUG 2000)

(e) - Continuation

Title	File	Drawing No.
INDEX SHEET	226/141	1
VICINITY MAP AND PROJECT LOCATION MAP	226/142	2
PROJECT LIMIT MAP	226/143	3
SURVEY CONTROL DATA SHEET	226/144	4
PLAN OF EXPLORATION	226/145	5
PLAN OF EXPLORATION	226/146	6
LEGENDS, NOTES, UNIFIED SOIL CLASSIFICATION SYSTEM, LOGS OF EXPLORATION	226/147	7
LOGS OF EXPLORATION	226/148	8
PLAN AND PROFILE, STATION 61+00 TO STATION 50+00	226/149	9
PLAN AND PROFILE, STATION 50+00 TO STATION 32+50	226/150	10
CHANNEL TYPICAL SECTIONS	226/151	11
GROUTED STONE INVERT STABILIZER	226/152	12
EAST DRAINAGE DITCH SURVEY CONTROL DATA	226/153	13
EAST DITCH SECTION AND DETAILS	226/154	14
WEST DITCH SECTION AND DETAILS	226/155	15
CROSS SECTIONS STA 59+00 TO 49+00	226/156	16
CROSS SECTIONS STA 48+00 TO 40+50	226/157	17
CROSS SECTIONS STA 40+00 TO 35+50	226/158	18
CROSS SECTIONS STA 35+00 TO 32+50	226/159	19
LANDSCAPE PLAN STA. 70+00 TO 50+00	226/160	20
LANDSCAPE PLAN STA. 50+00 TO 31+00	226/161	21
LANDSCAPE DETAILS	226/162	22
IRRIGATION PLAN 70+00 TO 50+00	226/163	23
IRRIGATION PLAN 50+00 TO 31+00	226/164	24
IRRIGATION DETAILS	226/165	25

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## SECTION 00850

## WAGE RATES

General Decision Number CA030036

Superseded General Decision No. **CA020036**

State: California

Construction Type:

BUILDING

DREDGING

HEAVY

HIGHWAY

County(ies):

RIVERSIDE

BUILDING CONSTRUCTION PROJECTS; DREDGING PROJECTS (does not include hopper dredge work); HEAVY CONSTRUCTION PROJECTS (does not include water well drilling); HIGHWAY CONSTRUCTION PROJECTS

Modification Number Publication Date

0 06/13/2003

COUNTY(ies):

RIVERSIDE

ASBE0005B 08/05/2002

Rates

Fringes

ASBESTOS WORKER/INSULATOR

Includes the application of all insulating materials, protective coverings, coatings, & finishes to all types of mechanical systems

33.06

8.11

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ASBE0005D 01/01/2003

Rates

Fringes

ASBESTOS REMOVAL WORKER /  
HAZARDOUS MATERIAL HANDLER

Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing of all insulation materials from mechanical systems, whether they contain asbestos or not

15.75

2.55

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BOIL0092F 10/01/2002

Rates

Fringes

BOILERMAKER

31.96

13.30

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BRCA0004U 05/01/2003

Rates

Fringes

BRICKLAYER; MARBLE MASON

29.42

6.20

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BRCA0018G 06/01/2002

Rates

Fringes

TILE LAYERS

26.50

7.45

TILE FINISHERS

16.65

2.91

MARBLE FINISHER

19.90

3.56

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BRCA0018K 12/01/2000

Rates

Fringes

TERRAZZO WORKER	26.78	5.34
TERRAZZO FINISHER	20.53	5.34
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CARP0002B 07/01/2001		
	Rates	Fringes
DIVERS:		
Diver, wet	486.08 per day	5.61
Diver, stand-by	243.04 per day	5.61
Diver tender	235.04 per day	5.61
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CARP0002Q 07/01/2002		
	Rates	Fringes
Work on wood framed construction of single family residences, apartments or condominiums under 4 stories		
DRYWALL INSTALLERS	19.00	5.18
DRYWALL STOCKER/SCRAPPER	10.00	4.68
All other work		
DRYWALL INSTALLERS	29.00	6.68
DRYWALL STOCKER/SCRAPPER	10.00	4.68
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CARP0003E 07/01/2002		
	Rates	Fringes
Work on wood frame, tilt up or concrete block construction including but not limited to: shopping centers, stores, office buildings, fast food establishments, also including curb, gutter and sidewalks where the total cost of the project does not exceed seven and one-half million (\$7,500,000.00) dollars.		
CARPENTERS:		
Carpenter, cabinet installer, insulation installer, floor worker and acoustical installer	22.75	6.28
Shingler	22.88	6.28
Roof loader of shingles	15.42	6.28
Saw filer	22.83	6.28
Table power saw operator	22.85	6.28
Pneumatic nailer or power stapler	23.00	6.28
Fence builder	20.30	6.28
Millwright	23.25	6.28
Pile driver; Derrick barge; Bridge or dock carpenter; Cable splicer; Heavy framer; Rockslinger	22.88	6.28
Head rockslinger	22.98	6.28
Rock barge or scow	22.78	6.28
Scaffold builder	17.00	6.28
All other work:		
Carpenter, cabinet installer, insulation installer, floor		

worker and acoustical installer	29.00	6.68
Shingler	29.13	6.68
Roof loader of shingles	20.77	6.68
Saw filer	29.08	6.68
Table power saw operator	29.10	6.68
Pneumatic nailer or power stapler	29.25	6.68
Fence builder	24.79	6.68
Millwright	29.50	6.68
Pile driver; Derrick barge; Bridge or dock carpenter; Cable splicer; Heavy framer; Rockslinger	29.13	6.68
Rockslinger	29.13	6.68
Rock barge or scow	29.03	6.68
Scaffold builder	23.20	6.68

## FOOTNOTE:

Work of forming in the construction of open cut sewers or storm drains, on operations in which horizontal lagging is used in conjunction with steel H-Beams driven or placed in pre-drilled holes, for that portion of a lagged trench against which concrete is poured, namely, as a substitute for back forms (which work is performed by piledrivers): \$0.13 per hour additional.

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 CARP0003H 08/01/2002

	Rates	Fringes
MODULAR FURNITURE INSTALLER	14.00	5.16
FULL WALL TECHNICIAN	20.14	5.16
MOBILE FILING SYSTEM INSTALLERS	13.10	4.66

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 ELEC0011C 12/01/2001

	Rates	Fringes
COMMUNICATIONS AND SYSTEMS WORK:		
Installer	22.13	3% + 4.40
Technician	23.93	3% + 4.40

## SCOPE OF WORK:

Installation, testing, service and maintenance of systems utilizing the transmission and/or transference of voice, sound, vision and digital for commercial, educational, security and entertainment purposes for the following: TV monitoring and surveillance, background-foreground music, intercom and telephone interconnect, inventory control systems, microwave transmission, multi-media, multiplex, nurse call systems, radio page, school intercom and sound, burglar alarms, fire alarm (see last paragraph below) and low voltage master clock systems in commercial buildings.

Communication Systems that transmit or receive information and/or control systems that are intrinsic to the above listed systems; inclusion or exclusion of terminations and testings of conductors determined by their function; excluding all other data systems or multiple systems which include control function or power supply; excluding installation of raceway systems, conduit systems, line voltage work, and energy management systems. Does not cover work performed at China Lake Naval Ordnance Test Station.

Fire alarm work shall be performed at the current inside

wireman total cost package.

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ELEC0440A 12/02/2002

	Rates	Fringes
ELECTRICIAN	29.23	3%+9.66
CABLE SPLICER	29.73	3%+9.66

ZONE PAY: Zone A: Free travel zone for all contractors performing work in Zone A.

Zone B: Any work performed in Zone (B) shall add \$8.00 per hour to the current wage scale. Zone (B) shall be the area from the eastern perimeter of Zone (A) to a line which runs north and south beginning at Little Morongo Canyon (San Bernardino/Riverside County Line), Southeast along the Coachella Tunnels, Colorado River Aqueduct and Mecca Tunnels to Pinkham Wash the South to Box Canyon Road, then southwest along Box Canyon Road to Highway 195 west onto 195 south to Highway 86 to Riverside/Imperial County Line.

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ELEC1245C 06/01/2002

	Rates	Fringes
LINE CONSTRUCTION:		
Lineman; Cable splicer	33.16	4.5%+7.08
Equipment specialist (operates crawler tractors, commercial motor vehicles, backhoes, trenchers, cranes (50 tons and below), and overhead and underground distribution line equipment)	28.19	4.5%+6.80
Groundman	21.56	4.5%+6.80
Powderman	31.51	4.5%+6.84

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ELEV0018A 09/15/2001

	Rates	Fringes
ELEVATOR MECHANIC	33.695	7.455

FOOTNOTE:  
Vacation Pay: 8% with 5 or more years of service, 6% for 6 months to 5 years service. Paid Holidays: New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Friday after, and Christmas Day.

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ENGI0012C 07/01/2002

	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
GROUP 1	27.85	11.85
GROUP 2	28.63	11.85
GROUP 3	28.92	11.85
GROUP 4	30.21	11.85
GROUP 5	30.43	11.85
GROUP 6	30.54	11.85
GROUP 7	30.66	11.85
GROUP 8	30.83	11.85
GROUP 9	30.93	11.85
GROUP 10	30.96	11.85
GROUP 11	31.04	11.85
GROUP 12	31.16	11.85
GROUP 13	31.33	11.85

GROUP 14	31.43	11.85
GROUP 15	31.54	11.85
GROUP 16	31.66	11.85
GROUP 17	31.83	11.85
GROUP 18	31.93	11.85
GROUP 19	32.04	11.85
GROUP 20	32.16	11.85
GROUP 21	32.33	11.85
CRANES, PILEDRIVING & HOISTING EQUIPMENT:		
GROUP 1	29.00	11.85
GROUP 2	29.78	11.85
GROUP 3	30.07	11.85
GROUP 4	30.21	11.85
GROUP 5	30.43	11.35
GROUP 6	30.54	11.85
GROUP 7	30.66	11.35
GROUP 8	30.83	11.85
GROUP 9	31.00	11.85
GROUP 10	32.00	11.85
GROUP 11	33.00	11.85
GROUP 12	34.00	11.85
GROUP 13	35.00	11.80
TUNNEL WORK:		
GROUP 1	30.28	11.85
GROUP 2	30.57	11.85
GROUP 3	30.71	11.85
GROUP 4	30.93	11.85
GROUP 5	31.04	11.85
GROUP 6	31.16	11.85
GROUP 7	31.46	11.85

FOOTNOTES: Workers required to suit up and work in a hazardous material environment: \$1.00 per hour additional.

Combination mixer and compressor operator on gunite work shall be classified as a concrete mobile mixer operator.

#### POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Bargeman; Brakeman; Compressor operator; Ditch Witch, with seat or similar type equipment; Elevator operator-inside; Engineer Oiler; Forklift operator (includes loed, lull or similar types under 5 tons; Generator operator; Generator, pump or compressor plant operator; Pump operator; Signalman; Switchman

GROUP 2: Asphalt-rubber plant operator (nurse tank operator); Concrete mixer operator-skip type; Conveyor operator; Fireman; Forklift operator (includes loed, lull or similar types over 5 tons; Hydrostatic pump operator; oiler crusher (asphalt or concrete plant); Petromat laydown machine; PJU side dum jack; Screening and conveyor machine oeprator (or similar types); Skiploader (wheel type up to 3/4 yd. without attachment); Tar pot fireman; Temporary heating plant operator; Trenching machine oiler

GROUP 3: Asphalt-rubber blend operator; Bobcat or similar type (side steer); Equipment greaser (rack); Ford Ferguson (with dragtype attachments); Helicopter radioman (ground); Stationary pipe wrapping and cleaning machine operator

GROUP 4: Asphalt plant fireman; Backhoe operator (mini-max or similar type); Boring machine operator; Boxman or mixerman (asphalt or concrete); Chip spreading machine operator; Concrete cleaning decontamination machine operator; Concrete Pump Operator

(small portable); Drilling machine operator, small auger types (Texoma super economatic or similar types - Hughes 100 or 200 or similar types - drilling depth of 30' maximum); Equipment greaser (grease truck); Guard rail post driver operator; Highline cableway signalman; Horizontal Directional Drilling Machine; Hydra-hammer-aero stomper; Micro Tunneling (above ground tunnel); Power concrete curing machine operator; Power concrete saw operator; Power-driven jumbo form setter operator; Power sweeper operator; Roller operator (compacting); Screed operator (asphalt or concrete); Trenching machine operator (up to 6 ft.); Vacuum or much truck

GROUP 5: Articulating material hauler; Asphalt plant engineer; Batch plant operator; Bit sharpener; Concrete joint machine operator (canal and similar type); Concrete planer operator; Dandy digger; Deck engine operator; Derrickman (oilfield type); Drilling machine operator, bucket or auger types (Calweld 100 bucket or similar types - Watson 1000 auger or similar types - Texoma 330, 500 or 600 auger or similar types - drilling depth of 45' maximum); Drilling machine operator (including water wells); Hydrographic seeder machine operator (straw, pulp or seed), Jackson track maintainer, or similar type; Kalamazoo Switch tamper, or similar type; Machine tool operator; Maginnis internal full slab vibrator, Mechanical berm, curb or gutter (concrete or asphalt); Mechanical finisher operator (concrete, Clary-Johnson-Bidwell or similar); Micro tunnel system (below ground); Pavement breaker operator (truck mounted); Road oil mixing machine operator; Roller operator (asphalt or finish), rubber-tired earth moving equipment (single engine, up to and including 25 yds. struck); Self-propelled tar pipelining machine operator; Skiploader operator (crawler and wheel type, over 3/4 yd. and up to and including 1-1/2 yds.); Slip form pump operator (power driven hydraulic lifting device for concrete forms); Tractor operator-bulldozer, tamper-scraper (single engine, up to 100 h.p. flywheel and similar types, up to and including D-5 and similar types); Tugger hoist operator (1 drum); Ultra high pressure waterjet cutting tool system operator; Vacuum blasting machine operator

GROUP 6: Asphalt or concrete spreading operator (tamping or finishing); Asphalt paving machine operator (Barber Greene or similar type); Asphalt-rubber distribution operator; Backhoe operator (up to and including 3/4 yd.), small ford, Case or similar; Cast-in-place pipe laying machine operator; Combination mixer and compressor operator (gunite work); Compactor operator (self-propelled); Concrete mixer operator (paving); Crushing plant operator; Drill Doctor; Drilling machine operator, Bucket or auger types (Calweld 150 bucket or similar types - Watson 1500, 2000 2500 auger or similar types - Texoma 700, 800 auger or similar types - drilling depth of 60' maximum); Elevating grader operator; Grade checker; Gradall operator; Grouting machine operator; Heavy-duty repairman; Heavy equipment robotics operator; Kalamazoo balliste regulator or similar type; Kolman belt loader and similar type; Le Tourneau blob compactor or similar type; Loader operator (Athey, Euclid, Sierra and similar types); Ozzie padder or similar types; P.C. slot saw; Pneumatic concrete placing machine operator (Hackley-Presswell or similar type); Pumpcrete gun operator; Rotary drill operator (excluding caisson type); Rubber-tired earth-moving equipment operator



(single engine, caterpillar, Euclid, Athey Wagon and similar types with any and all attachments over 25 yds. up to and including 50 cu. yds. struck); Rubber-tired earth-moving equipment operator (multiple engine up to and including 25 yds. struck); Rubber-tired scraper operator (self-loading paddle wheel type-John Deere, 1040 and similar single unit); Self-propelled curb and gutter machine operator; Shuttle buggy; Skiploader operator (crawler and wheel type over 1-1/2 yds. up to and including 6-1/2 yds.); Soil remediation plant operator; Surface heaters and planer operator; Tractor compressor drill combination operator; Tractor operator (any type larger than D-5 - 100 flywheel h.p. and over, or similar-bulldozer, tamper, scraper and push tractor single engine); Tractor operator (boom attachments), Traveling pipe wrapping, cleaning and bending machine operator; Trenching machine operator (over 6 ft. depth capacity, manufacturer's rating); Ultra high pressure waterjet cutting tool system mechanic; Water pull (compaction) operator

GROUP 7: Drilling machine operator, Bucket or auger types (Calweld 200 B bucket or similar types-Watson 3000 or 5000 auger or similar types-Texoma 900 auger or similar types-drilling depth of 105' maximum); Dual drum mixer, dynamic compactor LDC350 (or similar types); Monorail locomotive operator (diesel, gas or electric); Motor patrol-blade operator (single engine); Multiple engine tractor operator (Euclid and similar type-except Quad 9 cat.); Rubber-tired earth-moving equipment operator (single engine, over 50 yds. struck); Pneumatic pipe ramming tool and similar types; Prestressed wrapping machine operator; Rubber-tired earth-moving equipment operator (single engine, over 50 yds. struck); Rubber tired earth moving equipment operator (multiple engine, Euclid, caterpillar and similar over 25 yds. and up to 50 yds. struck), Tower crane repairman; Tractor loader operator (crawler and wheel type over 6-1/2 yds.); Woods mixer operator (and similar Pugmill equipment)

GROUP 8: Auto grader operator; Automatic slip form operator; Drilling machine operator, bucket or auger types (Calweld, auger 200 CA or similar types - Watson, auger 6000 or similar types - Hughes Super Duty, auger 200 or similar types - drilling depth of 175' maximum); Hoe ram or similar with compressor; Mass excavator operator less tha 750 cu. yards; Mechanical finishing machine operator; Mobile form traveler operator; Motor patrol operator (multi-engine); Pipe mobile machine operator; Rubber-tired earth-moving equipment operator (multiple engine, Euclid, Caterpillar and similar type, over 50 cu. yds. struck); Rubber-tired self-loading scraper operator (paddle-wheel-auger type self-loading - two (2) or more units)

GROUP 9: Rubber-tired earth-moving equipment operator operating equipment with push-pull system (single engine, up to and including 25 yds. struck)

GROUP 10: Canal liner operator; Canal trimmer operator; Remote-control earth-moving equipment operator (operating a second piece of equipment: \$1.00 per hour additional); Wheel excavator operator (over 750 cu. yds.)

GROUP 11: Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (single engine, Caterpillar, Euclid, Athey Wagon and similar types with any and all attachments over 25 yds. and up to and including 50 yds.

struck); Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (multiple engine-up to and including 25 yds. struck)

GROUP 12: Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (single engine, over 50 yds. struck); Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (multiple engine, Euclid, Caterpillar and similar, over 25 yds. and up to 50 yds. struck)

GROUP 13: Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (multiple engine, Euclid, Caterpillar and similar, over 50 cu. yds. struck); Tandem tractor operator (operating crawler type tractors in tandem - Quad 9 and similar type)

GROUP 14: Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - single engine, up to and including 25 yds. struck)

GROUP 15: Rotex concrete belt operator (or similar types); Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - single engine, Caterpillar, Euclid, Athey Wagon and similar types with any and all attachments over 25 yds. and up to and including 50 cu. yds. struck); Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - multiple engine, up to and including 25 yds. struck)

GROUP 16: Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - single engine, over 50 yds. struck); Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps, and similar types in any combination, excluding compaction units - multiple engine, Euclid, Caterpillar and similar, over 25 yds. and up to 50 yds. struck)

GROUP 17: Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - multiple engine, Euclid, Caterpillar and similar type, over 50 cu. yds. struck)

GROUP 18: Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (single engine, up to and including 25 yds. struck)

GROUP 19: Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (single engine, Caterpillar, Euclid, Athey Wagon and similar types with any and all attachments over 25 yds. and up to and including 50 yds. struck); Rubber-tired earth-moving equipment operator, operating with the tandem push-pull system (multiple engine, up to and including 25 yds. struck)

GROUP 20: Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (single engine, over 50 yds. struck); Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (multiple engine, Euclid, Caterpillar and similar, over 25 yds. and up to 50 yds. struck)

GROUP 21: Concrete pump operator-truck mounted; Rubber-tired

earth-moving equipment operator, operating equipment with the tandem push-pull system (multiple engine, Euclid, Caterpillar and similar type, over 50 cu. yds. struck)

CRANES, PILEDRIVING AND HOISTING EQUIPMENT CLASSIFICATIONS

GROUP 1: Engineer oiler; Fork lift operator (includes loed, lull or similar types)

GROUP 2: Truck crane oiler

GROUP 3: A-frame or winch truck operator; Ross carrier operator (jobsite)

GROUP 4: Bridge-type unloader and turntable operator; Helicopter hoist operator

GROUP 5: Hydraulic boom truck; Stinger crane (Austin-Western or similar type); Tugger hoist operator (1 drum)

GROUP 6: Bridge crane operator; Cretor crane operator; Hoist operator (Chicago boom and similar type); Lift mobile operator; Lift slab machine operator (Vagtborg and similar types); Material hoist and/or manlift operator; Polar gantry crane operator; Self Climbing scaffold (or similar type); Shovel, backhoe, dragline, clamshell operator (over 3/4 yd. and up to 5 cu. yds. mrc); Tugger hoist operator

GROUP 7: Pedestal crane operator; Shovel, backhoe, dragline, clamshell operator (over 5 cu. yds. mrc); Tower crane repair; Tugger hoist operator (3 drum)

GROUP 8: Crane operator (up to and including 25 ton capacity); Crawler transporter operator; Derrick barge operator (up to and including 25 ton capacity); Hoist operator, stiff legs, Guy derrick or similar type (up to and including 25 ton capacity); Shovel, backhoe, dragline, clamshell operator (over 7 cu. yds., M.R.C.)

GROUP 9: Crane operator (over 25 tons and up to and including 50 tons mrc); Derrick barge operator (over 25 tons up to and including 50 tons mrc); Highline cableway operator; Hoist operator, stiff legs, Guy derrick or similar type (over 25 tons up to and including 50 tons mrc); K-crane operator; Polar crane operator; Self erecting tower crane operator maximum lifting capacity ten tons

GROUP 10: Crane operator (over 50 tons and up to and including 100 tons mrc); Derrick barge operator (over 50 tons up to and including 100 tons mrc); Hoist operator, stiff legs, Guy derrick or similar type (over 50 tons up to and including 100 tons mrc), Mobile tower crane operator (over 50 tons, up to and including 100 tons M.R.C.); Tower crane operator and tower gantry

GROUP 11: Crane operator (over 100 tons and up to and including 200 tons mrc); Derrick barge operator (over 100 tons up to and including 200 tons mrc); Hoist operator, stiff legs, Guy derrick or similar type (over 100 tons up to and including 200 tons mrc); Mobile tower crane operator (over 100 tons up to and including 200 tons mrc)

GROUP 12: Crane operator (over 200 tons up to and including 300 tons mrc); Derrick barge operator (over 200 tons up to and including 300 tons mrc); Hoist operator, stiff legs, Guy derrick or similar type (over 200 tons, up to and including 300 tons mrc); Mobile tower crane operator (over 200 tons, up to and including 300 tons mrc)

GROUP 13: Crane operator (over 300 tons); Derrick barge operator (over 300 tons); Helicopter pilot; Hoist operator, stiff legs, Guy derrick or similar type (over 300 tons); Mobile tower

crane operator (over 300 tons)

TUNNEL CLASSIFICATIONS

GROUP 1: Skiploader (wheel type up to 3/4 yd. without attachment)

GROUP 2: Power-driven jumbo form setter operator

GROUP 3: Dinkey locomotive or motorperson (up to and including 10 tons)

GROUP 4: Bit sharpener; Equipment greaser (grease truck); Slip form pump operator (power-driven hydraulic lifting device for concrete forms); Tugger hoist operator (1 drum); Tunnel locomotive operator (over 10 and up to and including 30 tons)

GROUP 5: Backhoe operator (up to and including 3/4 yd.); Small Ford, Case or similar; Drill doctor; Grouting machine operator; Heading shield operator; Heavy-duty repairperson; Loader operator (Athey, Euclid, Sierra and similar types); Mucking machine operator (1/4 yd., rubber-tired, rail or track type); Pneumatic concrete placing machine operator (Hackley-Presswell or similar type); Pneumatic heading shield (tunnel); Pumpcrete gun operator; Tractor compressor drill combination operator; Tugger hoist operator (2 drum); Tunnel locomotive operator (over 30 tons)

GROUP 6: Heavy Duty Repairman

GROUP 7: Tunnel mole boring machine operator

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ENGI0012D 08/01/2002		
	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
DREDGING:		
Leverman	34.65	11.85
Dredge dozer	31.18	11.85
Deckmate	31.07	11.85
Winch operator (stern winch on dredge)	30.52	11.85
Fireman; deckhand and bargeman	29.98	11.85
Barge mate	30.59	11.85

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IRON0002E 07/01/2002		
	Rates	Fringes
IRONWORKERS:		
Fence erector	25.97	16.29
Ornamental, reinforcing and structural	26.86	16.29
FOOTNOTE: Work at Chocolate Mountains Naval Reserve-Niland additional \$3.00 per hour.		

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LABO0001B 07/01/2002		
	Rates	Fringes
BRICK TENDER	21.10	9.57

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LABO0002H 07/01/2002		
	Rates	Fringes
LABORERS:		
GROUP 1	20.10	9.98
GROUP 2	20.65	9.98
GROUP 3	21.20	9.98
GROUP 4	22.75	9.98
GROUP 5	23.10	9.98
TUNNEL LABORERS:		

GROUP 1	23.01	9.98
GROUP 2	23.33	9.98
GROUP 3	23.79	9.98
GROUP 4	24.48	9.98
GUNITE LABORERS:		
GROUP 1	22.84	12.73
GROUP 2	21.89	12.73
GROUP 3	18.35	12.73

## FOOTNOTE: GUNITE PREMIUM PAY:

Workers working from a Bosn'n's Chair or suspended from a rope or cable shall receive 40 cents per hour above the foregoing applicable classification rates.

Workers doing gunite and/or shotcrete work in a tunnel shall receive 35 cents per hour above the foregoing applicable classification rates, paid on a portal-to-portal basis.

Any work performed on, in or above any smoke stack, silo, storage elevator or similar type of structure, when such structure is in excess of 75'-0" above base level and which work must be performed in whole or in part more than 75'-0" above base level, that work performed above the 75'-0" level shall be compensated for at 35 cents per hour above the applicable classification wage rate.

## LABORER CLASSIFICATIONS

GROUP 1: Cleaning and handling of panel forms; Concrete screeding for rough strike-off; Concrete, water curing; Demolition laborer, the cleaning of brick if performed by a worker performing any other phase of demolition work, and the cleaning of lumber; Fire watcher, limber, brush loader, piler and debris handler; Flag person; Gas, oil and/or water pipeline laborer; Laborer, asphalt-rubber material loader; Laborer, general or construction; Laborer, general clean-up; Laborer, landscaping; Laborer, jetting; Laborer, temporary water and air lines; Material hose operator (walls, slabs, floors and decks); Plugging, filling of shee bolt holes; Dry packing of concrete; Railroad maintenance, repair track person and road beds; Streetcar and railroad construction track laborers; Rigging and signaling; Scaler; Slip form raiser; Tar and mortar; Tool crib or tool house laborer; Traffic control by any method; Window cleaner; Wire mesh pulling - all concrete pouring operations

GROUP 2: Asphalt shoveler; Cement dumper (on 1 yd. or larger mixer and handling bulk cement); Cesspool digger and installer; Chucktender; Chute handler, pouring concrete, the handling of the chute from readymix trucks, such as walls, slabs, decks, floors, foundation, footings, curbs, gutters and sidewalks; Concrete curer, impervious membrane and form oiler; Cutting torch operator (demolition); Fine grader, highways and street paving, airport, runways and similar type heavy construction; Gas, oil and/or water pipeline wrapper - pot tender and form person; Guinea chaser; Headerboard person - asphalt; Laborer, packing rod steel and pans; Membrane vapor barrier installer; Power broom sweeper (small); Riprap stonepaver, placing stone or wet sacked concrete; Roto scraper and tiller; Sandblaster (pot tender); Septic tank digger and installer(lead); Tank scaler and cleaner; Tree climber, faller, chain saw operator, Pittsburgh chipper and similar type brush shredder; Underground laborer, including caisson bellower

GROUP 3: Buggymobile person; Concrete cutting torch; Concrete

pile cutter; Driller, jackhammer, 2-1/2 ft. drill steel or longer; Dri-pak-it machine; Gas, oil and/or water pipeline wrapper, 6-in. pipe and over, by any method, inside and out; High scaler (including drilling of same); Hydro seeder and similar type; Impact wrench multi-plate; Kettle person, pot person and workers applying asphalt, lay-kold, creosote, lime caustic and similar type materials ("applying" means applying, dipping, brushing or handling of such materials for pipe wrapping and waterproofing); Operator of pneumatic, gas, electric tools, vibrating machine, pavement breaker, air blasting, come-alongs, and similar mechanical tools not separately classified herein; Pipelayer's backup person, coating, grouting, making of joints, sealing, caulking, diapering and including rubber gasket joints, pointing and any and all other services; Rock slinger; Rotary scarifier or multiple head concrete chipping scarifier; Steel headerboard and guideline setter; Tamper, Barko, Wacker and similar type; Trenching machine, hand-propelled

GROUP 4: Asphalt raker, lute person, ironer, asphalt dump person, and asphalt spreader boxes (all types); Concrete core cutter (walls, floors or ceilings), grinder or sander; Concrete saw person, cutting walls or flat work, scoring old or new concrete; Cribber, shorer, lagging, sheeting and trench bracing, hand-guided lagging hammer; Head rock slinger; Laborer, asphalt-rubber distributor boot person; Laser beam in connection with laborers' work; Oversize concrete vibrator operator, 70 lbs. and over; Pipelayer performing all services in the laying and installation of pipe from the point of receiving pipe in the ditch until completion of operation, including any and all forms of tubular material, whether pipe, metallic or non-metallic, conduit and any other stationary type of tubular device used for the conveying of any substance or element, whether water, sewage, solid gas, air, or other product whatsoever and without regard to the nature of material from which the tubular material is fabricated; No-joint pipe and stripping of same; Prefabricated manhole installer; Sandblaster (nozzle person), water blasting, Porta Shot-Blast

GROUP 5: Blaster powder, all work of loading holes, placing and blasting of all powder and explosives of whatever type, regardless of method used for such loading and placing; Driller: All power drills, excluding jackhammer, whether core, diamond, wagon, track, multiple unit, and any and all other types of mechanical drills without regard to the form of motive power; Toxic waste removal

#### TUNNEL LABORER CLASSIFICATIONS

GROUP 1: Batch plant laborer; Bull gang mucker, track person; Changehouse person; Concrete crew, including rodger and spreader; Dump person; Dump person (outside); Swamper (brake person and switch person on tunnel work); Tunnel materials handling person

GROUP 2: Chucktender, cabletender; Loading and unloading agitator cars; Nipper; Pot tender, using mastic or other materials (for example, but not by way of limitation, shotcrete, etc.); Vibrator person, jack hammer, pneumatic tools (except driller)

GROUP 3: Blaster, driller, powder person; Chemical grout jet person; Cherry picker person; Grout gun person; Grout mixer person; Grout pump person; Jackleg miner; Jumbo person; Kemper and other pneumatic concrete placer operator; Miner,

tunnel (hand or machine); Nozzle person; Operating of troweling and/or grouting machines; Powder person (primer house); Primer person; Sandblaster; Shotcrete person; Steel form raiser and setter; Timber person, retimber person, wood or steel; Tunnel Concrete finisher

GROUP 4: Diamond driller; Sandblaster; Shaft and raise work

#### GUNITE LABORER CLASSIFICATIONS

GROUP 1: Nozzle person and rod person

GROUP 2: Gun person

GROUP 3: Rebound person

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LABO0783I 08/07/2002

	Rates	Fringes
PLASTERER TENDER	23.00	10.17
PLASTER CLEAN-UP LABORER	20.45	10.17

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LABO0882B 01/01/2002

	Rates	Fringes
ASBESTOS REMOVAL LABORER	20.97	7.65

SCOPE OF WORK: Includes site mobilization, initial site cleanup, site preparation, removal of asbestos-containing material and toxic waste, encapsulation, enclosure and disposal of asbestos-containing materials and toxic waste by hand or with equipment or machinery; scaffolding, fabrication of temporary wooden barriers and assembly of decontamination stations.

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LABO1184A 07/01/2002

	Rates	Fringes
LABORERS - STRIPING:		
GROUP 1	20.65	8.42
GROUP 2	21.50	8.42
GROUP 3	23.82	8.42
GROUP 4	26.02	8.42

#### LABORERS - STRIPING CLASSIFICATIONS

GROUP 1: Protective coating, pavement sealing, including repair and filling of cracks by any method on any surface in parking lots, game courts and playgrounds; carstops; operation of all related machinery and equipment; equipment repair technician

GROUP 2: Traffic surface abrasive blaster; pot tender - removal of all traffic lines and markings by any method (sandblasting, waterblasting, grinding, etc.) and preparation of surface for coatings. Traffic control person: controlling and directing traffic through both conventional and moving lane closures; operation of all related machinery and equipment

GROUP 3: Traffic delineating device applicator: Layout and application of pavement markers, delineating signs, rumble and traffic bars, adhesives, guide markers, other traffic delineating devices including traffic control. This category includes all traffic related surface preparation (sandblasting, waterblasting, grinding) as part of the application process. Traffic protective delineating system installer: removes, relocates, installs, permanently affixed roadside and parking delineation barricades, fencing, cable anchor, guard rail, reference signs, monument markers; operation of all related machinery and equipment; power broom sweeper

GROUP 4: Striper: layout and application of traffic stripes and markings; hot thermo plastic; tape traffic stripes and markings,

including traffic control; operation of all related machinery and equipment

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LABO1184E	07/01/2002	
	Rates	Fringes
SLURRY SEAL WORK		
LABORERS:		
Group 1	21.66	8.42
Group 2	22.86	8.42
Group 3	24.72	8.42
Group 4	26.32	8.42
GROUP 1 - Traffic Control Person & Serviceman; including work of installing and protecting utility covers, traffic delineating devices, posting of no parking and notifications for public convenience, surface cleaning by any method, repair and filing of cracks by any means, and other work not directly connected with the application of slurry seal.		
GROUP 2 - Squeegeeman (finish); Traffic control person.		
GROUP 3 - Applicator operator (line driver); Power broom sweeper operator; Operation of all related machinery and equipment; Shuttleman		
GROUP 4 - Mix operator		
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PAIN0036A	07/01/2002	
	Rates	Fringes
Work on service stations and and car washes; Small new commercial work (defined as construction up to and including 3 stories in height, such as small shopping centers, small stores, small office buildings and small food establishments); Small new industrial work (defined as light metal buildings, small warehouses, small storage facilities and tilt-up buildings); Repaint work (defined as repaint of breweries, commercial recreational facilities, hotels which operate commercial establishments as part of hotel service, and sports facilities); Tenant improvement work (defined as tenant improvement work not included in conjunction with the construction of the building, and all repainting of tenant improvement projects		
PAINTER (including lead abatement)	21.75	5.89
All other work:		
PAINTER	25.02	5.89



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PAIN0036H 10/01/2002		
	Rates	Fringes
DRYWALL FINISHERS	26.33	8.48
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PAIN0036R 06/01/2002		
	Rates	Fringes
GLAZIERS	29.20	8.45
FOOTNOTE: Additional \$1.25 per hour for work in a condo, from the third (3rd) floor and up Additional \$1.25 per hour for work on the outside of the building from a swing state or any suspended contrivance, from the ground up		
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PAIN1247B 01/01/2003		
	Rates	Fringes
SOFT FLOOR LAYER	26.70	6.25
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PLAS0200I 08/07/2002		
	Rates	Fringes
PLASTERERS	26.77	6.76
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PLAS0500B 07/01/2002		
	Rates	Fringes
CEMENT MASON	23.05	11.56
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PLUM0016A 07/01/2002		
	Rates	Fringes
Work on strip malls, light commercial, tenant improvement and remodel work:		
PLUMBER & PIPEFITTER	23.03	8.24
Work on new additions and remodeling of bars, restaurant, stores and commercial buildings not to exceed 5,000 sq. ft. of floor space		
PLUMBER & PIPEFITTER	28.92	9.44
All other work:		
PLUMBER & PIPEFITTER	29.81	10.01
Landscape and irrigation work:		
PLUMBER & PIPEFITTER	23.27	9.56
Sewer and storm drain work:		
PLUMBER & PIPEFITTER	20.25	9.75
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PLUM0345A 07/01/2002		
	Rates	Fringes
LANDSCAPE & IRRIGATION FITTER	23.27	9.56
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ROOF0036B 09/01/2001		
	Rates	Fringes
ROOFER	24.77	5.40
Duties limited to the following: Roof removal of any type of roofing or roofing material; or spudding,		

or sweeping; and/or clean-up;  
and/or preload in, or in preparing  
the roof for application of  
roofing, damp and/or  
waterproofing materials

PREPARER 16.24 1.00  
FOOTNOTE: Pitch premium: Work on which employees are exposed to  
pitch fumes or required to handle pitch, pitch base or pitch  
impregnated products, or any material containing coal tar pitch,  
the entire roofing crew shall receive \$1.75 per hour "pitch  
premium" pay.

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SFCA0669B 04/01/2003  
Rates Fringes  
SPRINKLER FITTER (FIRE) 30.05 6.10  
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SHEE0102G 07/01/2002  
Rates Fringes  
INDUSTRIAL  
Work on all air pollution control  
systems, noise abatement panels,  
blow pipe, air-veyor systems,  
dust collecting, baghouses,  
heating, air conditioning, and  
ventilating (other than creature  
comfort) and all other industrial  
work, including metal insulated  
ceilings  
SHEETMETAL WORKER 26.07 15.00  
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SHEE0102H 01/01/2003  
Rates Fringes  
COMMERCIAL:  
Work on all commercial HVAC for  
creature comfort and computer  
clean rooms, architectural metals,  
metal roofing and lagging, over  
insulation  
SHEET METAL WORKER 29.41 11.97  
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TEAM0011E 07/01/2002  
Rates Fringes  
TRUCK DRIVERS:  
GROUP 1 21.84 12.84  
GROUP 2 21.99 12.84  
GROUP 3 22.12 12.84  
GROUP 4 22.31 12.84  
GROUP 5 22.25 12.84  
GROUP 6 22.37 12.84  
GROUP 7 22.62 12.84  
GROUP 8 22.87 12.84  
GROUP 9 23.02 12.84  
GROUP 10 23.37 12.84  
GROUP 11 23.87 12.84

TRUCK DRIVER CLASSIFICATIONS  
GROUP 1: Truck driver  
GROUP 2: Driver of vehicle or combination of vehicles - 2

axles; Traffic control pilot car excluding moving heavy equipment permit load; Truck-mounted broom  
 GROUP 3: Driver of vehicle or combination of vehicles - 3 axles; Boot person; Cement mason distribution truck; Fuel truck driver; Water truck - 2 axle; Dump truck, less than 16 yds. water level; Erosion control driver  
 GROUP 4: Driver of transit mix truck, under 3 yds.; Dumpcrete truck, less than 6-1/2 yds. water level  
 GROUP 5: Water truck, 3 or more axles; Truck greaser and tire person (\$0.50 additional for tire person); Pipeline and utility working truck driver, including winch truck and plastic fusion, limited to pipeline and utility work; Slurry truck driver  
 GROUP 6: Transit mix truck, 3 yds. or more; Dumpcrete truck, 6-1/2 yds. water level and over; Vehicle or combination of vehicles - 4 or more axle; Oil spreader truck; Dump truck, 16 yds. to 25 yds. water level  
 GROUP 7: A Frame, Swedish crane or similar; Forklift driver; Ross carrier driver  
 GROUP 8: Dump truck, 25 yds. to 49 yds. water level; Truck repair person; Water pull - single engine; Welder  
 GROUP 9: Truck repair person/welder; Low bed driver, 9 axles or over  
 GROUP 10: Dump truck - 50 yds. or more water level; Water pull - single engine with attachment  
 GROUP 11: Water pull - twin engine; Water pull - twin engine with attachments; Winch truck driver - \$1.25 additional when operating winch or similar special attachments

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 WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.  
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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(ii)).  
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In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

#### WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U. S. Department of Labor  
200 Constitution Avenue, N. W.  
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N. W.  
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U. S. Department of Labor  
200 Constitution Avenue, N. W.  
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

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## SECTION 01200

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## SECTION 01200

## GENERAL REQUIREMENTS

## PART 1 GENERAL

Definition - Unless otherwise stated, the term "Contractor" is meant to be the Murrieta Creek Phase 1 Channel Contractor.

## 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

## ASME INTERNATIONAL (ASME)

ASME B18.2.1 (1996) Square and Hex Bolts and Screws  
(Inch Series)

ASME B18.2.2 (1987; R 1999) Square and Hex Nuts

## DEPARTMENT OF COMMERCE (DOC)

PS-1 (1995) Construction and Industrial Plywood

PS-20 (1999) American Softwood Lumber Standard

## U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1 (1996) U.S. Army Corps of Engineers Safety  
and Health Requirements Manual

EM 1110-1-1003 (1996) NAVSTAR Global Positioning System  
Surveying

EM 1110-1-1005 (1994) Topographic Surveying

## MASTER PAINTERS INSTITUTE (MPI)

MPI 5 (2001) Exterior Alkyd Wood Primer

MPI 10 (2001) Exterior Latex, Flat

## 1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The "RE" designates that the Resident Office will review the submittal for the Government.



Submit the following in accordance with Section 01330, SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Topographic Surveyor; G, RE.

The Topographic Surveyor firm selected by the Contractor must be approved by the Contracting Officer prior to performing surveys for this contract.

Site Plan; G, RE.

The Contractor shall submit the site plan to the Contracting Officer prior to installing project facilities for this contract.

Site-specific Safety and Health Plan; G, RE.

The Contractor shall submit the site-specific safety and health plan for approval by the Contracting Officer prior to start of construction activities.

Activity Hazards Safety Analysis.

The Contractor shall submit each activity hazards safety analysis as required by this section to the Contracting Officer.

Traffic Control Plan.

The Contractor shall obtain approval of the Traffic Control Plan from the City of Temecula and submit to the Government prior to start of construction.

Access and Haul Roads

The Contractor shall submit the layout of the access and haul roads necessary for proper prosecution of the work within the Murrieta Creek Phase 1 Right Of Way's and Temporary Construction Easement's under this contract.

Practicable Schedule; G, RE.

The Contractor shall submit the practicable schedule for Contracting Officer approval.

Annotated Schedule

The Contractor shall submit the annotated schedule as required.

Haul route plan; G, RE.

The Contractor shall submit a haul route plan for removal of required excavated materials and for hauling of required fill materials.

Encroachment Permit

The Contractor shall submit encroachment permits if obtained.

#### SD-02 Shop Drawings

Pre-construction topographic survey of the entire project site, except optional disposal site.

The contractor shall submit to the Contracting Officer pre-construction surveys of the entire project site shown on the drawings.

Pre-construction topographic survey of the optional disposal site.

The contractor shall submit to the Contracting Officer pre-construction surveys of the optional disposal site if it is to be used by the Contractor.

Post-construction topographic survey of the entire project site, except optional disposal site.

The contractor shall submit to the Contracting Officer post-construction surveys of the entire project site for the fill work shown on the drawings.

Post-construction topographic survey of the optional disposal site.

The contractor shall submit to the Contracting Officer post-construction surveys of the optional disposal site if it is used by the Contractor.

### 1.3 PROJECT FACILITIES

#### 1.3.1 Site Plan

The Contractor shall prepare a site plan, for the Contracting Officer's approval, indicating the proposed location and dimensions of any area to be fenced and used by the Contractor, the number of trailers to be used, avenues of ingress/egress to the fenced area and details of the fence installation. Any areas which may have to be graveled to prevent the tracking of mud shall also be identified. The Contractor shall also indicate if the use of a supplemental or other staging area is desired.

#### 1.3.2 Construction Signs

The signs shall be erected as soon as possible and within 15 days after commencement of work under this contract.

- a. Five Project Signs at locations designated by the Contracting Officer.
- b. Warning Signs facing approaching traffic on all roads crossing under overhead power transmission lines and at the bases of the power transmission line towers.
- c. Six hard hat signs at locations designated by the Contracting Officer.

#### 1.3.3 Bulletin Board at the Contractor's Office

A weatherproof bulletin board, approximately 36 inches and 30 inches with

hinged glass door shall be provided adjacent to or mounted on the Contractor's project office.

#### 1.3.4 Sanitary Facilities

The Contractor shall provide and maintain within the construction area minimum field-type sanitary facilities approved by the Contracting Officer.

#### 1.3.5 Employee Parking

Contractor employees shall park privately owned vehicles in an area approved by the Contracting Officer. This area will be within reasonable walking distance of the construction site.

#### 1.3.6 CONTRACTING OFFICER'S FACILITY

The Contractor shall provide a facility for the Contracting Officer's Representative in accordance with the following description. The Contractor shall submit the floor plan for Contracting Officer's approval prior to supplying the facility.

##### 1.3.6.1 Trailer

The Contractor shall provide a 12 ft. x 60 ft. trailer within the Contractor's staging area as directed by the Contracting Officer. All utilities (including electrical, water, sewage and telephone) shall be connected, installed and maintained for the trailer. Water and sanitary facilities shall be located within the trailer. The trailer is to be provided with two(2) unisex restrooms. Septic tank may be substituted should connection to local sewer line not be available. An adequate supply of cooled bottled drinking water shall be furnished and maintained. Janitorial service for the trailer shall be provided three (3) times per week (Monday, Wednesday and Friday). The trailer is to be provided with a 24 hour monitored security system, including exterior door sensors, motion detectors and a control key pad. All windows are to be provided with security bars or grates.

##### 1.3.6.2 Furniture and Equipment

The following furniture and equipment shall be provided and maintained:

- |    |      |  |
|----|------|--|
| a. | 3 ea | Telephone lines and service                      |
| b. | 3 ea | Telephone  |
| c. | 3 ea | Desk, 3 feet by 5 feet                           |
| d. | 3 ea | Wheeled desk chairs, with arm rests              |
| e. | 3 ea | File cabinets, minimum 4 drawer, legal, lockable |
| f. | 3 ea | Book case, minimum 3 shelves                     |
| g. | 2 ea | Wheeled secretarial chairs                       |
| h. | 1 ea | Standard bulletin board for interior of office   |
| i. | 1 ea | Liquid chalkboard                                |
| j. | 1 ea | Standard copy machine                            |
| k. | 1 ea | FAX machine                                      |
| l. | 1 ea | Under counter refrigerator                       |
| m. | 1 ea | Microwave oven                                   |

#### 1.3.6.3 Parking

Open parking space for 6 vehicles shall be located conveniently to the office. The combined parking and building area shall be enclosed with a woven wire fence approximately 10 feet high, with a 10 feet wide lockable gate accessible from a road or street, and barbed or razor wire be placed on top of the fence and gate. The fenced area shall be sufficient size to permit ease in the parking of vehicles. Automatic Security lighting is to be provided around the office trailer and parking area. The security lighting shall come on just before dusk and shut off at first morning light. Materials for the facilities need not be new, provided they are adequate for the intended use. The cost for sewer, water, power, and telephone usage will be the responsibility of the Contractor except that the Contractor will be reimbursed for any long distance telephone charges not related to the project.

#### 1.3.6.4 Occupancy

The Project Engineer's Office shall be available for occupancy within 10 days of the Notice to Proceed and not be removed prior to the completion date of the contract.

### PART 2 PRODUCTS

#### 2.1 CONSTRUCTION SIGNS

##### 2.1.1 Materials

##### 2.1.1.1 Lumber

Shall be in accordance with PS-20, and shall be seasoned Douglas Fir, S4S, Grade D or better except that posts, braces and spacers shall be construction Grade (WCLB).

##### 2.1.1.2 Plywood

Shall be in accordance with PS-1, grade A-C, Group 1, exterior type.

##### 2.1.1.3 Bolts, Nuts and Nails

Bolts shall conform to ASME B18.2.1, nuts shall conform to ASME B18.2.2, and nails shall conform to commercially available supplies.

##### 2.1.1.4 Paints and Oils

Paints shall conform to MPI 5 for primer and MPI 10 for finish paint and lettering.

### PART 3 EXECUTION

#### 3.1 CONSTRUCTION OF SIGNS

##### 3.1.1 Project and Hard Hat Signs

Constructed as detailed in Figures 1,2,3 and Safety Signs. Decals for signs will be furnished by the Contracting Officer.

### 3.1.2 Warning Signs

Constructed of plywood not less than 1/2 inch thick and shall be securely bolted to the supports with the bottom of the sign face 39 inches above the ground. The sign face shall be 2 feet x 4 feet, all letters shall be 4 inches in height, and the wording shall be: "WARNING: OVERHEAD TRANSMISSION LINES."

### 3.2 PAINTING SIGNS

All exposed surfaces and edges of plywood shall be given one coat of linseed oil and be wiped prior to applying primer. All exposed surfaces of signs and supports shall be given one coat of primer and 2 finish coats of white paint. Except as otherwise indicated, lettering on all signs shall be black and sized as indicated.

### 3.3 Additional Project Engineer's Equipment

Contractor shall provide computer software (3.5" floppy disc size) to the Contracting Officer for the type of scheduling system to be used and quantity/fill programs for tracking or estimating bid quantities during construction. Scheduling software must be capable of downloading completely to the COE Standard Data Exchange Format.

### 3.4 Bulletin Board at the Contractor's Project Office

Install weatherproof bulletin board adjacent to or mounted on the Contractor's project office. If adjacent to the Contractor's project office, the bulletin board shall be securely mounted on no less than 2 posts. Bulletin board and posts shall be painted or have other approved factory finish. The bulletin board shall be easily accessible at all times and shall contain wage rates, equal opportunity notice, and such other items required to be posted.

### 3.5 MAINTENANCE AND DISPOSAL OF PROJECT FACILITIES

The Contractor shall maintain the project facilities in good condition throughout the life of the project. Upon completion of work under this contract, the facilities covered under this section will remain the property of the Contractor and shall be removed from the site at his expense.

### 3.6 SCRAP MATERIAL

Materials indicated to be removed and not indicated to be salvaged, stored or reinstalled are designated as scrap and shall become the property of the Contractor and be removed from the site of work. The Contractor by signing this contract hereby acknowledges that he made due allowance for value, if any, of such scrap in the contract price.

### 3.7 ARCHAEOLOGICAL FINDINGS DURING CONSTRUCTION

Should the Contractor or any of his employees in the performance of this contract find or uncover any archaeological remains, he shall notify the Project Engineer immediately. Such notifications will be a brief statement in writing giving the location and nature of the findings. Should the discovery site require archaeological studies resulting in delays and/or additional work, the Contractor will be compensated by an equitable adjustment under the CONTRACT CLAUSES of the contract. See also Section 01355 paragraph HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES for additional information.

### 3.8 PROTECTION OF EXISTING WORK

Before beginning any cutting or removal work, the Contractor shall carefully survey the existing work and examine the drawings and specifications to determine the extent of the work. The Contractor shall take all necessary precautions to insure against damage to such work to remain in place, to be reused, or to remain the property of the Government, and any damage to such work shall be repaired or replaced as approved by the Contracting Officer at no additional cost to the Government. The Contractor shall carefully coordinate the work of this section with all other work and construct and maintain shoring, bracing and supports, as required. The Contractor shall insure that structural elements are not overloaded and be responsible for increasing structural supports or adding new supports as may be required as a result of any cutting, removal, or demolition work performed under any part of this contract.

### 3.9 PUBLIC UTILITIES, NOTICES, AND RESTRICTIONS

#### 3.9.1 General

The approximate location of all railroads, pipelines, power and communication lines, and other utilities known to exist within the limits of the work are indicated on the drawings. The sizes, locations, and names of owners of such utilities are given from available information, but their accuracy is not guaranteed. Except as otherwise indicated on the drawings, all existing utilities will be left in place and the Contractor shall conduct his operations in such a manner that the utilities will be protected from damage at all times, or arrangements shall be made by the Contractor for their relocation at the Contractor's own expense. The Contractor shall be responsible for any damage to utilities known to exist and shall reimburse the owners for such damage caused by his operations.

##### 3.9.1.1 Existing Sewer, Water, Irrigation Facilities, Electrical, Telecommunications, and Gas Utilities

Contractor shall coordinate with utility owners prior to excavation in the vicinity of utility lines. Contractor shall protect in place existing sewer, water, irrigation facilities, electrical, telecommunications, and gas utilities within Channels permanent Rights-of-Ways (ROW) and Temporary Construction Easements (TCEs), including such utilities which cross beneath the channel. Contractor shall repair any damaged existing sewer, water, irrigation facilities, electrical, telecommunications, and gas utilities

within Channels permanent ROW and TCE including such facilities which cross beneath the channels, if the damaged utility was damaged by the Channel Contractor operations.

### 3.9.2 Relocation or Removal

Utilities to be relocated or removed not as part of this contract are designated "To be Relocated by Others" or "To be Removed by Others", respectively. Utilities shown on the plans and not so designated will be left in place and be subject to the provisions of the CONTRACT CLAUSE: PROTECTION OF EXISTING VEGETATION, STRUCTURES, UTILITIES, AND IMPROVEMENTS.

The Contractor may make arrangements with the owner for the temporary relocation and restoration of utilities not designated to be relocated, or for additional work in excess of the work needed to relocate utilities designated for relocation at no additional cost to the Government.

### 3.9.3 Utilities Not Shown

If the Contractor encounters, within the construction limits of the entire project, utilities not shown on the plans and not visible as of the date of this contract and if such utilities will interfere with construction operations, he shall immediately notify the Contracting Officer in writing to enable a determination by the Contracting Officer as to the necessity for removal or relocation. If such utilities are left in place, removed or relocated, as directed by the Contracting Officer, the Contractor shall be entitled to an equitable adjustment for any additional work or delay.

### 3.9.4 Coordination

The Contractor shall consult and cooperate with the owner of utilities that are to be relocated or removed by others to establish a mutual performance schedule and to enable coordination of such work with the construction work. The Contractor shall consult and cooperate with the owner of utilities that are to be relocated or removed by others to establish a mutual performance schedule and to enable coordination of such work with the construction work. These consultations shall be held as soon as possible after award of the contract or sufficiently in advance of anticipated interference with construction operations to provide required time for the removal or relocation of affected utilities.

### 3.9.5 Notices

#### 3.9.5.1 Utilities To be Relocated or Protected

Unless otherwise specified, the Contractor shall notify the Contracting Officer, in writing, 14 calendar days prior to starting work on any utility to be relocated or protected. On each relocation, notification shall include dates on which the Contractor plans excavation, by-pass work, removal work and/or installation work, as applicable. The Contractor shall also notify the following representatives of utility owners not less than 7 days prior to the start of work in the vicinity of their respective utilities.

Mr. Kiernan Callahan

Metropolitan Water District  
700 North Alameda  
Los Angeles, California 90012  
Telephone: (213)217-7474

Mr. John Martinez  
Water System Operations Group  
Metropolitan Water District  
Telephone: (909)776-2616

Mr. Paul Mc Donnell  
Southern California Edison Company  
26100 Menifee Road  
Perris, CA 92585  
(909)928-8334

Mr. Andrew Webster  
Planning and Capital Improvements Manager  
Rancho California Water District  
42135 Winchester Road  
Temecula, California 92590  
PO Box 9017  
Temecula, California 92589-9017  
(909)296-6900

Mr. Jeff Wall  
Eastern Municipal Water District  
2270 Trumble Road  
Perris, California 92572  
(909)928-3777

Ms. Nancy Beltran  
Adelphia Cable  
4077 West Stetson Avenue  
Hemet, California 94545  
(909)766-4270

Mr. Dan Orr  
Southern California Gas Company  
Post Office Box 3003  
Redlands, California 92373-0306  
(909)335-7828

a) Staking of Utilities

In addition to notification of representatives of utility owners, the Contractor shall notify the City of Temecula Public Works at (909) 694-6411 and Underground Service Alert (USA) at 1-800-422-4133, between the hours of 7:00 a.m. and 4:30 p.m. at least four full working days prior to any excavation within any street right-of-way or any work in the vicinity of known underground utilities, to have underground utilities field located and staked.

b) MWD Water Lines



During construction, Metropolitan Water District's field personnel will make periodic inspections. The Contractor shall notify Mr. John Martinez of the Water System Operations Group, Metropolitan Water District, by telephone (909)776-2616, at least two working days (Monday through Thursday) prior to starting any work in the vicinity of MWD facilities and MWD right-of-way.

#### 3.9.5.2 Bench Marks and R/W Markers

The Contractor shall notify the Contracting Officer, in writing, 7 days in advance of the time he proposes to remove any existing bench mark or right-of-way marker.

#### 3.9.5.3 ENVIRONMENTAL ASSESSMENT REQUIREMENT

In order to satisfy the Environmental Assessment for this project, the Contractor shall notify the Contracting Officer 14 calendar days prior to the start of any construction activity, so that the Corps conducts a final biological survey for the potential presence of endangered/threatened species. The Corps is required to have a biologist present during all clearing and grubbing operations. Any coordination between the biologist and the Contractor shall be conducted through the Contracting Officer.

#### 3.9.5.4 Spill Reporting

The Contractor shall notify the Contracting Officer immediately after any spill, regardless of quantity, including all personnel exposures. The Contractor shall submit a written notification not later than 7 calendar days after the initial notification. The written notification shall include the following:

- a. Item spilled, leaked or releases in an unauthorized manner (Identification, Quantity and Manifest Numbers).
- b. Whether the amount spilled, leaked or released in an unauthorized manner is EPA reportable and, if reported, a copy of the report.
- c. Exact location of the spill, leak or unauthorized release.
- d. Nature of exposure to personnel.
- e. Containment procedures initiated.
- f. Anticipated cleanup and disposal procedure.
- g. Disposal location of spill, leak or unauthorized release residue.

#### 3.9.6 Restrictions

##### 3.9.6.1 Other Agency Representatives

Personnel representing owners and other agencies may be present for various portions of the work. However, the Contractor will be responsible only to

the Contracting Officer.

#### POINTS OF CONTACT

##### a) List of Contractor Contacts

Prior to the start of work, the Contractor shall provide the Contracting Officer with names, addresses and 24-hour phone numbers of the Contractor's project engineer, superintendent and foreman.

##### b) List of Government Agency Contacts

The following is a partial list of Government Agency points of contact:

Agency	Contact	Telephone
EMERGENCY		911
U.S.Army Corps of Engineers		
Resident Engineer	Dan Moore	(909)655-2101
Project Engineer	Kevin Thomas	(858)674-6767
Ecosystem Planning Section	Joy Jaiswal	(213)452-3851
Senior Archeologist	Stephen Dibble	(213)452-3849
Geotechnical Section	Douglas Chitwood	(213)452-3587
Rancho California Water District Engineering Services Division	Andrew Webster	(909)296-6900)
South Coast Air Quality Management District		(909)396-2000
State Water Resources Control Board		(916)341-5536
San Diego Regional Water Quality Control Board	Megan Fisher	(858)268-6363
City of Temecula		
Police Department		(909)696-3000
Fire Department		(909)694-6405
Director of Public Works	William Hughes	(909)694-6411
Deputy Director of Public Works	Ron Parks	(909)694-6411
Post Office Box 9033 Temecula, California 92589-9033		
Underground Service Alert (USA)		(800)422-4133
CALTRANS		
Transportation Permits, Oversize Loads		(909)383-4637
P.O. Box 231 247 W. Third Street San Bernardino, California		

California Highway Patrol Temecula Office		(909)506-2000
Riverside County Sheriff	Non-emergency	(909)955-2444
Animal Control		(909)358-7387
Riverside County Flood Control and Water	Steve Thomas	(909)955-1299
Conservation District	Zully Smith	(909)955-1233
	Randy Sheppeard	(909)955-1306

#### 3.9.6.2 Traffic Control Plan

The Contractor shall develop a Traffic Control Plan and obtain an approval from the City of Temecula prior to construction. The plan shall include details of truck haul routes. See paragraph HAUL ROUTE in this section for additional information.

#### 3.9.6.3 Existing Roads

The construction schedule shall be prepared giving full consideration to maintaining traffic on existing roads. Additional work on the existing roads may be performed by others during the life of this contract.

#### 3.9.6.4 Access and Haul Roads

Access and haul roads shall be proposed so that use of existing residential streets are minimized.

#### 3.9.6.5 Public and Private Roads

When it is necessary to operate on existing roads outside the construction area, all necessary permits shall be obtained from the appropriate private or public authority. Work shall be conducted in such manner so as to obstruct and inconvenience traffic on existing roads outside the construction limits as little as possible. Spillage of earth, dusty materials, boulders, and mud on project roads or other road will not be permitted. If spillage cannot be prevented, the spillage shall be immediately removed and such areas shall be kept clear throughout the workday. At the conclusion of each workday, such traveled areas shall be cleared of spillage, boulders, and mud.

#### 3.9.6.6 MAINTENANCE AND REPAIR OF STREETS, ACCESS ROADS, AND WORK AREAS

The Contractor shall restore streets and access roads (used for haul routes and mobilizing equipment) and work areas to original condition upon completion of the work, at no additional cost to the Government. Contractor shall restore streets and roads used in the haul route to local city standards at no additional cost to the Government. All haul and access roads, within the construction area, including the borrow areas, utilized by the construction equipment, shall be maintained to provide vehicular access for the Government's vehicles and the Contractor's vehicles and equipment. Road maintenance shall include rock/mud slides, washouts, and any incident which would restrict vehicular/equipment access.

Prior to any alterations of any road alignment, the Contractor shall receive an approval from the Contracting Officer. Road maintenance and alterations shall be performed by the Contractor at no additional cost to the Government. See paragraph HAUL ROUTE in this section for exceptions and additional information.

#### 3.9.6.7 HAUL ROUTES

The Contractor shall submit the haul route plan prior to start of hauling material.

- 1) The Contractor shall utilize the Haul Route with the repair and maintenance requirements described below. The Contractor will be responsible for obtaining all permits and licenses necessary to haul material to the optional disposal site.
  - a) Entry and Egress - The Contractor shall enter and exit the Murrieta Creek Phase 1 project from the Contractors Staging Area on the east side of the channel shown on the drawings.
  - b) Optional Disposal Site Haul Route - For disposal of excess satisfactory excavated materials from the Murrieta Creek Phase 1 project to the optional disposal site, the haul route shall begin from the Contractors Staging Area on the east side of the channel shown on the drawings, then travel south on Front Street, then east onto Highway 79 South, pass under the I-15 Freeway, then onto the on ramp for the north bound I-15 freeway, travel on the north bound I-15 freeway to the Winchester off ramp, turn left onto Winchester, turn right onto Jefferson, and enter the optional disposal site between Santa Gertrudis Creek and Cherry Street as shown on the drawing sheets.
  - c) Return Route - For return route from the optional disposal site, the Contractor shall utilize a reverse direction of the streets listed in the above optional disposal site haul route.
  - d) For the improved streets described in the above optional disposal site haul route, the Contractor shall bear all expenses necessary to repair and maintain the improved streets, including streets, roads, on ramps, off ramps, freeways, structures and appurtenances to local city standards for the continual use by the general public.
- 2) Use of other haul routes than above: the Contractor shall be responsible for obtaining all permits and licenses, and be responsible for all expenses, including repair and maintenance of streets, related to the disposition of material that has become the property of the Contractor and is hauled off-site.

#### 3.9.6.8 Traffic Safety

In accordance with CONTRACT CLAUSE: ACCIDENT PREVENTION, signs, barricades, and warning devices shall be provided, installed, and maintained as are required for protection of vehicular traffic at any location where

operations interfere with public roads. Signs, barricades, lights, and signals, shall be in conformance with Part VI of the U.S. Department of Transportation Manual on Uniform Traffic Control Devices for Streets and Highways.

#### 3.9.6.9 Rock and Gravel

Rock and gravel for use on haul roads and other facilities may be obtained from any source within the excavation limits, borrow area, or stockpiles, that are within the project boundaries and are not designated for other use. The Contractor at no expense to the Government may also obtain rock and gravel for use on haul roads and other facilities from outside sources provided that the material is not contaminated. The use of any source shall be subject to any additional requirements within these specifications and to approval by the Contracting Officer.

#### 3.9.6.10 Cooperation with Others

The Contractor shall coordinate his activities and cooperate with other contractors as to not delay or interfere with their work.

#### 3.9.7 Working Hours

The Contractor shall restrict all construction activities to the following schedule:

Monday thru Friday	6:30 a.m. to 7 p.m.
Saturday	8 a.m. to 7 p.m.

No work will be permitted on Sundays or Federal Holidays without the prior written approval from the Contracting Officer.

Employee access to the job site will be allowed 30 minutes prior to starting time unless otherwise approved by the Contracting Officer.

Disposal area(s) and haul route(s) utilized by the Contractor may require restricted hauling hours. The Contractor is notified that hauling or disposal activities may be restricted to normal business hours (7 a.m. to 4 p.m. in the event that such operations are considered to be disruptive to existing neighborhood safety and noise conditions. In the event that such a situation develops, the Contracting Officer shall notify the Contractor of restrictive hauling and/or disposal times. The Contractor shall develop their schedule for construction so that restrictive hauling times can be absorbed without extending the overall contract completion period.

#### 3.9.8 Construction Water

The Contractor shall be responsible for obtaining water for construction purposes at no additional cost to the Government. Construction water shall be fresh, clean, potable, and free from any injurious amounts of oil, acid, salt, or alkali. The Contractor shall be responsible for contacting the Rancho California Water District Engineering Services Division (909-296-6900) to make arrangements for a water meter and water source. The Contractor is responsible for all costs associated with providing water

for construction. The Contractor shall be responsible for obtaining approvals from the Riverside County Flood Control and Water Conservation District (RCFC&WCDD) and for coordination with other projects in the area.

#### 3.9.9 Identification of Vehicles

All the Contractor's vehicles shall display suitable permanent identification.

#### 3.9.10 Construction Method Observation

Any construction method, plant, or piece of equipment used on this contract shall not be considered proprietary, and can be inspected or photographed at any time by the Government, regulatory agencies, or any group approved by the Government.

#### 3.9.11 Contractor's Equipment

The planned method of transportation and operation of cranes and other heavy equipment to be used in the performance of this contract shall be submitted for approval by the Contracting Officer. The plan shall include the type, size, loadings of equipment, the proposed transportation routes, and work areas to be used on the project.

### 3.10 PUBLIC SAFETY

Attention is directed to the CONTRACT CLAUSE: PERMITS AND RESPONSIBILITIES.

The Contractor shall provide temporary fencing, barricades, and/or guards, as required, to provide protection in the interest of public safety. Whenever the Contractor's operations create a condition hazardous to the public, he shall furnish at his own expense and without cost to the Government, such watchmen, flagmen and guards as are necessary to give adequate warning to the public of any dangerous conditions to be encountered and he shall furnish, erect, or maintain such fences, barricades, lights, signs and other devices as are necessary to prevent accidents and avoid damage or injury to the public. Flagmen, watchmen, and guards, while on duty and assigned to give warning and safety devices shall conform to applicable city, county, and state requirements. Should the Contractor appear to be neglectful or negligent in furnishing adequate warning and protection measures, the Contracting Officer may direct attention to the existence of a hazard and the necessary warning and protective measures shall be furnished and installed by the Contractor without additional cost to the Government. Should the Contracting Officer point out the inadequacy of warning and protective measures, such action of the Contracting Officer shall not relieve the Contractor from any responsibility for public safety or abrogate his obligation to furnish and pay for those devices. The installation of any general illumination shall not relieve the Contractor of his responsibility for furnishing and maintaining any protective facility.

#### 3.10.1 Traffic Maintenance

During construction the Contractor shall provide access to roads as necessary to maintain traffic. The Contractor shall maintain and protect

traffic on all affected roads during the construction period except as otherwise specifically directed by the Contracting Officer. Measures for the protection and diversion of traffic, including the provision of watchmen and flagmen, erection of barricades, placing of lights around and in front of equipment and the work, and the erection and maintenance of adequate warning, danger, and direction signs, shall be as required by the State and local authorities having jurisdiction. The traveling public shall be protected from damage to person and property. The Contractor's traffic on roads selected for hauling material to and from the site shall interfere as little as possible with public traffic. The Contractor shall investigate the adequacy of existing roads and the allowable load limit on these roads. The Contractor shall be responsible for the repair of any damage to roads caused by construction operations at no additional cost to the Government.

#### 3.10.1.1 Traffic Routing

The Contractor shall notify the Contracting Officer, the City of Temecula Public Works Department, and the Riverside County Flood Control and Water Conservation District at least 7 days in advance of the time that work will be started in areas requiring the rerouting of traffic, and removal of street signs. The foregoing shall apply to progressive modifications of traffic routings within an area in which work is in progress. A permit is required. The City of Temecula shall be notified by contacting the Public Works Department telephone number (909)694-6411.

#### 3.10.1.2 Street Closure

City of Temecula Public Works Department, Riverside County Sheriff, Highway Patrol, Fire Department, Riverside County Flood Control and water Conservation District, and all affected property owners, shall be notified by the Contractor whenever a street is to be closed to traffic. Approval is required prior to closing. If closing is to be of a long duration, a single notification to each department 7 days in advance of closing will be sufficient. A single notification shall then be made at the time the street is again opened to traffic. If the closing is to be of short duration or if different sections of the street are to be closed at different times, notification shall be made on a day-to-day basis.

Should temporary road closures be necessary, the Contractor shall clearly mark and identify alternative routes and detours. Proper signage, flagman, and strict adherence to driving safety procedures shall be implemented and utilized by the Contractor, with special attention being given in multi-use zones.

#### 3.10.2 Access and Haul Roads

The Contractor shall, at its own expense, construct access and haul roads necessary for proper prosecution of the work within the Murrieta Creek Phase 1 Right Of Way's and Temporary Construction Easement's under this contract. Access and haul roads shall be constructed with suitable grades and widths; sharp curves, blind corners, and dangerous cross traffic shall be avoided. The Contractor shall provide necessary lighting, signs, barricades, and distinctive markings for the safe movement of traffic. The

method of dust control (reference section 01355 ENVIRONMENTAL PROTECTION, paragraph PROTECTION OF AIR RESOURCES) shall be adequate to ensure safe operation at all times. Location, grade, width, and alignment of access and haul roads shall be subject to approval by the Contracting Officer. Lighting shall be adequate to assure full and clear visibility for full width of access and haul roads and work areas during any early morning/early evening work operations. Access and haul roads shall not damage permanent structures. Upon completion of the work, access and haul roads designated by the Contracting Officer shall be removed.

Plans shall be submitted to the Contracting Officer for approval for all proposed access and haul roads, whether within or outside the limits of the construction area, at least 14 calendar days prior to use of and construction of such roads. The plans shall indicate width of road, direction of traffic, road markings, type of guardrail if necessary, curves, grades, runouts, and other information in sufficient detail for studying safety of the proposed roads. Haul roads shall be proposed so that use of existing residential streets and roads are minimized.

#### 3.10.3 Public and Private Access Roads

When it is necessary for heavy equipment to operate on or to cross project roads or arterial roads, flaggers, signs, lights and/or other necessary safeguards shall be furnished to safely control and direct the flow of traffic. When it is necessary to operate on existing roads outside the construction area, all necessary permits shall be obtained from the appropriate private or public authority. Work shall be conducted in such manner so as to obstruct and inconvenience traffic on existing roads outside the construction limits as little as possible. Spillage of earth, dusty materials, and mud on project roads or other roads will not be permitted. If spillage cannot be prevented, the spillage shall be immediately removed and such areas shall be kept clear throughout the workday. At the conclusion of each workday, such traveled areas shall be cleared of spillage, dusty materials, and mud.

#### 3.10.4 Maintenance of Roads

All access and haul roads, within the construction area, including the borrow areas, shall be maintained to provide vehicular access for the Government's vehicles and the contractor's vehicles and equipment. Road maintenance shall include rock/mud slides, washouts, and any incident which would restrict vehicular/equipment access. Prior to any alterations of any road alignment, the contractor shall receive an approval from the Contracting Officer. Road maintenance and alterations shall be performed by the contractor at no additional cost to the Government.

#### 3.10.5 Barricades

The Contractor shall erect and maintain temporary barricades to limit public access to hazardous areas. Such barricades shall be required whenever safe public access to paved areas such as roads, parking areas or sidewalks is prevented by construction activities or as otherwise necessary to ensure the safety of both pedestrian and vehicular traffic. Barricades shall be securely placed, clearly visible with adequate illumination to



provide sufficient visual warning of the hazard during both day and night.

### 3.11 OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA) STANDARDS

#### 3.11.1 General

The Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, (see SECTION 00700, CONTRACT CLAUSES: ACCIDENT PREVENTION) and the Occupational Safety and Health Act (OSHA) Standards for Construction (Title 29, Code of Federal Regulations Parts 1910 and 1926 as revised from time to time) and Cal/OSHA Title 8 Regulations are all applicable to this contract.

In case of conflict, the most stringent requirement of the standards is applicable. Pursuant to EM 385-1-1, the Contractor shall submit a Site-specific Safety and Health Plan for approval by the Contracting Officer prior to start of construction work.

#### 3.11.2 Activity Hazard Analysis

Based on the construction schedule, the Contractor shall submit an Activity Hazards Safety Analysis of each major phase or work prior to entering that phase of activity. The analysis shall include major or high risk hazards, as well as commonly recurring deficiencies that might possibly be encountered for that operation, and shall identify proposed methods and techniques of accomplishing each phase in a safe manner. The Prime Contractor's superintendent shall take active participation in the Activity Hazard Analysis, including the subcontractor's work. Prior to start of actual work a meeting shall be held with the Prime Contractor, Government, and affected subcontractor to review the Activity Hazard Analysis. In addition, job site meetings shall be held to train exhaustively foreman and workers on details of this analysis.

#### 3.11.3 Accident Reporting

In accordance with EM 385-1-1, the Contractor shall submit a written summary of worker's compensation claims which have been filled by worker's in connection with work on the project. The summary shall be submitted at the time when the work is approximately 50 percent complete and at project completion. The summary shall include all subcontractors. The Contractor's and subcontractor's compensation insurance carrier shall certify that the summaries are "correct and true".

### 3.12 PERMITS

#### 3.12.1 General

Reference is made to the clause of the contract entitled "Permits and Responsibilities", which obligates the Contractor to obtain all required licenses and permits.

#### 3.12.2 Air Pollution Permit (APP)

The Contractor shall obtain an APP from the Southern California Air Quality Management District (SCAQMD). Three copies of the permit shall be submitted to the Contracting Officer. For further information, contact a

SCAQMD Permit Services representative at telephone number (909) 396-3385.

#### 3.12.2.1 Air Quality

Contractor shall have a current, valid Air Quality permit for all equipment that require an Air Quality permit.

#### 3.12.3 National Pollutant Discharge Elimination System (NPDES) Permit

The Contractor shall obtain coverage under the Statewide General Permit in accordance with Section 01355, ENVIRONMENTAL PROTECTION, paragraph NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES), SWPPP AND NOI. Copies of the NPDES, the Storm Water Pollution Prevention Plan (SWPPP), the Notice of Intent (NOI) and all associated documents including receipt acknowledgements shall be maintained on-site throughout the construction period. A copy of the plan shall be submitted to the Contracting Officer. For further information, contacts are available in Section 01355, ENVIRONMENTAL PROTECTION, paragraph NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES), SWPPP AND NOI.

#### 3.12.4 Oversize Loads

Oversize loads, over 8'6" wide, may require a Caltrans permit for hauling on State highways. P.O.C. Caltrans, Transportation Permits, P.O. Box 231, 247 W. Third Street, San Bernardino, CA, (909) 383-4637.

#### 3.12.5 Encroachment Permit

The Contractor will be responsible for obtaining all permits and licenses necessary to haul material to the optional disposal site and to haul material off-site. The Contractor must apply for a no cost Encroachment Permit from the Riverside County Flood Control and Water Conservation District for disposition of excess satisfactory excavated materials and excess rock excavated materials in the optional disposal site. A copy of any encroachment permit shall be submitted to the COE.

#### 3.13 FAR 52.236-15 Schedules for Construction Contracts.

##### SCHEDULES FOR CONSTRUCTION CONTRACTS (APR 1984)

- (a) The Contractor shall, within five days after the work commences on the contract or another period of time determined by the Contracting Officer, prepare and submit to the Contracting Officer for approval three copies of a practicable schedule showing the order in which the Contractor proposes to perform the work, and the dates on which the Contractor contemplates starting and completing the several salient features of the work (including acquiring materials, plant, and equipment). The schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of work scheduled for completion by any given date during the period. If the Contractor fails to submit a schedule within the time prescribed, the Contracting Officer may withhold approval of progress payments until the Contractor submits

the required schedule.

- (b) The Contractor shall enter the actual progress on the chart as directed by the Contracting Officer, and upon doing so shall immediately deliver three copies of the annotated schedule to the Contracting Officer. If, in the opinion of the Contracting Officer, the Contractor falls behind the approved schedule, the Contractor shall take steps necessary to improve its progress, including those that may be required by the Contracting Officer, without additional cost to the Government. In this circumstance, the Contracting Officer may require the Contractor to increase the number of shifts, overtime operations, days of work, and/or the amount of construction plant, and to submit for approval any supplementary schedule or schedules in chart form as the Contracting Officer deems necessary to demonstrate how the approved rate of progress will be regained.

- (c) Failure of the Contractor to comply with the requirements of the Contracting Officer under this clause shall be grounds for a determination by the Contracting Officer that the Contractor is not prosecuting the work with sufficient diligence to ensure completion within the time specified in the contract. Upon making this determination, the Contracting Officer may terminate the Contractor's right to proceed with the work, or any separable part of it, in accordance with the default terms of this contract.

(End of clause)

### 3.14 NOTICE OF PARTNERSHIP

The Government intends to encourage the foundation of a cohesive partnership with the Contractor and its subcontractors. This partnership will be structured to draw on the strengths of each organization to identify and achieve reciprocal goals. The objectives are effective and efficient contract performance and intended to achieve completion within budget, on schedule, and in accordance with plans and specifications; and to develop a single cooperative management team focused on the success of the project. This partnership would be bilateral in makeup, and participation will be totally voluntary. An integral aspect of partnering is the resolution of disputes in a timely, professional, and non-adversarial manner through the use of issue clarification and problem solving. Alternate Dispute Resolution (ADR) methodologies will be encouraged in place of more formal dispute resolution procedures. ADR will assist in promoting and maintaining an amicable working relationship to preserve the partnership. ADR is a voluntary, non-binding procedure available for use by the parties to this contract to resolve any dispute that may arise during performance. Any cost associated with effectuating this partnership will be agreed to by both parties and will be shared equally with a change in contract price. To implement this partnership initiative it is anticipated that within 60 days of Notice to Proceed the Contractor's on-site project manager and the Government's Resident Engineer would attend a two day partnership development seminar/team building workshop together with the Contractor's key on-site staff and key

Government personnel. Follow-up workshop of 1 to 2 days duration would be held periodically throughout the duration of the contract as agreed to by the Contractor and Government.

### 3.15 TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER (ER 415-1-15, 31 OCT 89)

- a. This provision specifies the procedure for determination of time extensions for unusually severe weather in accordance with the CONTRACT CLAUSE: DEFAULT (FIXED PRICE CONSTRUCTION). In order for the Contracting Officer to award a time extension under this clause, the following conditions must be satisfied:

- (1) The weather experienced at the project site during the contract period must be found to be unusually severe, that is, more severe than the adverse weather anticipated for the project location during any given month.
- (2) The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the Contractor.

- b. The following schedule of monthly anticipated adverse weather delays is based on National Oceanic and Atmospheric Administration (NOAA) or similar data for the project location and will constitute the base line for monthly weather time evaluations. The Contractor's progress schedule must reflect these anticipated adverse weather delays in all weather dependent activities.

#### MONTHLY ANTICIPATED ADVERSE WEATHER DAYS Work Days Based on five (5) Day Work Week

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
6	4	4	3	1	1	1	1	1	1	2	5

- c. Upon acknowledgment of the Notice to Proceed (NTP) and continuing throughout the contract, the Contractor will record on the daily CQC report, the occurrence of adverse weather and resultant impact to normally scheduled work. Actual adverse weather delay days must prevent work on critical activities for 50 percent or more of the Contractor's scheduled work day. The number of actual adverse weather delay days shall include days impacted by actual adverse weather (even if adverse weather occurred in previous month), be calculated chronologically from the first to the last day of each month, and be recorded as full days. If the number of actual adverse weather delay days exceeds the number of days anticipated in subparagraph b, the Contracting Officer will convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather work days, and issue a modification in accordance with the CONTRACT CLAUSE: DEFAULT (FIXED PRICE CONSTRUCTION).

### 3.16 REQUIRED INSURANCE

The Contractor shall procure and obtain during the entire period of his performance under this contract the following minimum insurance:

- a. General Public Liability insurance for bodily injury and property damage with minimum limits of \$1,000,000 combined single limit per occurrence and \$1,000,000 annual aggregate for bodily injury to or death, personal injury and property damage.
- b. Automobile Liability insurance for bodily injury and property damage with minimum limits of \$1,000,000 combined single limit for each occurrence and \$1,000,000 annual aggregate.
- c. Either Workman's Compensation or Employer's Liability insurance with a minimum limit of \$1,000,000.

In every case the insurance coverage shall amount to at least the limits stated above. However, where the Financial Responsibility Compulsory Insurance Law of the State in which the installation is located requires higher limits, the Automobile Liability Insurance Policy should provide coverage of at least those limits. County of Riverside, California, a political subdivision of the State of California, and Riverside County Flood Control & Water Conservation District and City of Temecula, California, shall be named as additional insured parties and all policies issued in performance of work under this contract.

The Contractor does hereby agree to indemnify, defend, and save harmless County of Riverside, California, a political subdivision of the State of California, and Riverside County Flood Control & Water Conservation District and City of Temecula, California, from loss, damage, liability, costs, or expense to the proportionate extent caused by the Contractor, his employees, agents, or consultants and/or consultants arising out of its performance of this contract, including, but not limited to the negligent acts, errors, omissions, or intentional misconduct of the Contractor, its employees, agents or consultants and/or subconsultants in connection with this contract.

Contractor further does hereby agree, as a precaution to the performance of any work under this contract and as a precaution to any obligation of County of Riverside, California, a political subdivision of the State of California, and Riverside County Flood Control & Water Conservation District and City of Temecula, California, to make any payment under this contract, to provide County of Riverside, California, a political subdivision of the State of California, and Riverside County Flood Control & Water Conservation District and City of Temecula, California, with a certificate and/or a certificate issued by the State Industrial Insurance System (SIIS) in accordance with applicable California Statutes.

Contractor agrees to maintain required workers compensation throughout the entire term of the contract. If Contractor does not maintain coverage throughout the entire term of the contract, Contractor agrees that Owner may, at any time the coverage is not maintained by Contractor, order the Contractor to stop work, assess liquidated damages as defined herein, suspend the contract, or terminate the contract. For each six month period this contract is in effect, Contractor agrees, prior to the expiration of

the six month period, make another written request to SIIS for the provisions of a certificate and notice of lapse in or nonpayment of coverage. If Contractor does not make the request or does not provide the certificate before the expiration of the six month period, Contractor agrees that owner may order the Contractor to stop work, suspend the contract or terminate the contract.

### 3.17 SPECIAL CONSTRUCTION REQUIREMENTS

The Contractor shall restrict his operation and adapt his construction schedule to accommodate the following:

#### 3.17.1 Murrieta Creek Phase 1 Construction Schedule

With exception to the Biological Trappings per Section 01355 ENVIRONMENTAL PROTECTION, the Contractor shall not begin construction activities on Murrieta Creek Phase 1 property for the construction of the Murrieta Creek Phase 1 until after September 1, 2003.

#### 3.17.2 Project Limits

The Contractor's work, employee parking, operations, staging, equipment assembly and maintenance, and other on-site activities shall be restricted to actual areas of construction within the Project Limits. The Project Limits of the Murrieta Creek Phase 1 are indicated on the drawings, and constitute the maximum limits of the construction area available for Contractor's operations. The Project Limits are generally defined by the Right-of-Way (R/W , ROW) and adjoining Temporary Construction Easements (TCE) as shown on the plans, unless designated otherwise (either in the plans, in these Specifications or by the Contracting Officer).

The Contractor shall be solely responsible for obtaining agreements with and acquisition from adjacent land owners, when additional land or access points are required to supplement the Contractor's operations or staging needs. No appurtenances or other public access facilities (either temporary or permanent) shall be constructed beyond the Project Limits.

#### 3.17.3 Existing Roads

##### 3.17.3.1 Front Street, First Street, Pujol Street

The Contractor shall maintain public access along Front Street, First Street, and Pujol Street at all times during this contract. Signs and reflective barriers are to be used as required to allow safe passage.

#### 3.17.4 Coordination with Other Contractors

##### 3.17.4.1 Developing Communities surrounding Murrieta Creek Phase 1

The Contractor is advised that communities surrounding Murrieta Creek Phase 1, are currently under construction. Work to be performed under those community contracts consists of construction of commercial, subdivision, related utilities and connector roads.

### 3.17.5 Runoff Murrieta Creek Phase 1

The work areas for Murrieta Creek Phase 1 will occur in areas that are subject to flowing waters as a result of rainfall. In addition, the Murrieta Creek Phase 1 work area is subject to flowing waters as a result of irrigation runoff and other construction related activities (new communities development). The Contractor is advised that it is their responsibility to protect their work from these probable events. In addition to these and other coordination issues discussed herein, see also specification Section 02100 DIVERSION AND CONTROL OF WATER. See also paragraph National Pollution Discharge Elimination System (NPDES) Permit.

#### 3.17.5.1 Runoff Side Drains

The Contractor shall anticipate storm (and nuisance) runoff coordination from side drains and at side drain locations along the Murrieta Creek Phase 1 project. Some side drains and laterals are active while others will become active during the life of the Murrieta Creek Phase 1 project. The Contractor shall conduct construction activities with full coordination of these runoff waters and shall safely allow them to pass without inundating other areas of adjacent development. Drainage from side drains, laterals and all future side drain locations shall not be interrupted.

### 3.17.6 Front Street, First Street, and Pujol Street Construction Access for Others

The Front Street, First Street, and Pujol Way Streets and crossings are required to have continuous construction access for others across the Murrieta Creek Phase 1 alignment. The Contractor shall be required to schedule Murrieta Creek Phase 1 traffic activities and detours as necessary to ensure that traffic activities other than the Murrieta Creek Phase 1 project are not interrupted. Any detours utilized by the Contractor shall provide means of passage through the Channel work area that include equivalent road surface requirements (for instance asphalt paving if applicable).

### 3.17.7 Excess Excavated Material, Disposition of

Excess excavated material, both satisfactory and unsatisfactory, originating from the construction of the Murrieta Creek Phase 1, shall become the property and responsibility of the Contractor. The Contractor is allowed to dispose of the excess satisfactory excavated material and excess rock excavated material from Murrieta Creek Phase 1 as follows: off site at no additional cost to the Government; and/or at optional disposal site at no additional cost to the Government.

The Contractor at his discretion may dispose of excess satisfactory excavated material and/or excess rock excavated material originating from the construction of the Murrieta Creek Phase 1 in the optional disposal site located between Cherry Street, Jefferson Avenue, and Santa Gertrudis Creek, by placing and grading the excess satisfactory excavated material as shown on the drawings and by manageably stockpiling the excess rock excavated material, at no additional cost to the Government and/or to dispose the excess satisfactory and rock excavated material off site at no

additional cost to the Government. The optional disposal site has capacity for 300,000 cubic yards of excess satisfactory excavated material. The use of the optional disposal site will require that the Contractor apply for a no cost Encroachment Permit through the Riverside County Flood Control and Water Conservation District, and that further guidelines may be set forth in the Encroachment Permit.

The optional disposal site is available to the Contractor to utilize for excess satisfactory excavated material and excess rock excavated material provided that the Contractor adheres to earthwork requirements that are included in the drawings. The Contractor is to anticipate that this optional disposal site shall be available for the Contractors use throughout the contract duration of this contract up to construction acceptance of the Murrieta Creek Phase 1, however, not including the 1 year maintenance and irrigation requirements required elsewhere in the contract.

The Contractor shall dispose of only excess satisfactory excavated material and excess rock excavated material originating on Murrieta Creek Phase 1 construction activities as stated above in the optional disposal site, and any other material, satisfactory or unsatisfactory, from off project sites is not allowed into the optional disposal site. The Contractor is advised that Front Street, First Street, and Pujol Way, and the street and roads adjacent to the project such as State Highway 79 and Interstate 15, are all currently active and open streets to the Public. The haul route shall be in accordance with paragraph HAUL ROUTE of this section, and shall be coordinated through the development of traffic control plans submitted to and approved by the City of Temecula.

#### 3.17.7.1 General

At the option of the Contractor, excess satisfactory excavated material from the Murrieta Creek Phase 1 channel excavation shall be disposed off within the optional disposal site shown on the drawing and as follows:

- a) Prior to hauling excess excavated material to the optional disposal site, the Contractor shall submit a pre-construction topographic survey of the optional disposal site with 1 foot contour intervals in accordance with paragraph CONTRACTOR'S SURVEYS of this section;
- b) The Contractor shall prepare the optional disposal site in accordance with paragraph PREPARATION FOR PLACING IN OPTIONAL DISPOSAL SITE of this section;
- c) The Contractor shall segregate into manageable stockpiles the excess rock excavated materials from the excess satisfactory excavated materials within the optional disposal site, and the stockpiled rock shall be placed to prevent ponding of water within the optional disposal site and site and within the stockpiles;
- d) The Contractor will evenly spread and grade the excess satisfactory material, beginning in the area of the optional disposal site adjacent to Jefferson Avenue, such that it drains by gravity westward towards Murrieta Creek;
- e) The approximate dimensions of the optional disposal site foundation or



footprint for placing excess satisfactory excavated materials and/or excess rock excavated material stockpiles is 1200 feet along Jefferson Avenue x 900 feet along Cherry Street. The height of the placed material may not exceed 8 feet along the Jefferson Avenue axis, with the placed material sloping towards Murrieta Creek to allow drainage to occur.

- f) Upon completion of spreading and grading the excess satisfactory excavated material and the manageable stockpiling of excess rock excavated material work within the optional disposal site, the Contractor shall submit a post-construction topographic survey of the optional disposal site with 1 foot contour intervals in accordance with Section 01200 GENERAL REQUIREMENTS paragraph CONTRACTOR'S SURVEYS of this section;
- g) Upon completion of the Murrieta Creek Phase 1 work, the Contractor shall relinquish all rights to ownership of the excess satisfactory excavated material and the excess rock excavated material that are within the boundary of the optional disposal site.

#### 3.17.7.2 PREPARATION FOR PLACING IN OPTIONAL DISPOSAL SITE

The foundation for the material to be placed shall be cleared of all existing obstructions, trash, building materials, construction materials, vegetation and debris. The approximate dimensions of the optional disposal site foundation or footprint for placing excess satisfactory excavated materials and/or excess rock excavated material stockpiles is 1200 feet along Jefferson Avenue x 900 feet along Cherry Street. Any existing obstructions, trash, building materials, construction materials, vegetation and debris shall be removed in accordance with Section 02230 CLEAR SITE AND REMOVE OBSTRUCTIONS. Unsatisfactory or unstable (too wet) material and soils not meeting the requirements for fill material shall be removed where directed.

#### 3.17.8 Coordination for Utilities

During the life of the Murrieta Creek Phase 1 contract, the Contractor shall anticipate numerous coordination issues with utility owners at various locations along the Murrieta Creek Phase 1 alignment. New utilities are required to support this rapidly developing area. As a minimum, the Metropolitan Water District, the Southern California Edison Company, the Rancho California Water District, the Eastern Municipal Water District, Adelphia Cable Company, and the Southern California Gas Company have utility interests within the project boundaries and the Contractor shall coordinate and accommodate these utility concerns as necessary. The Contractor shall coordinate all Murrieta Creek Phase 1 work with utility companies desiring access to the Murrieta Creek Phase 1 ROW or TCE limits identified on the contract drawings. The Contractor shall permit any utility or its delegated representative to enter into and use Murrieta Creek Phase 1 ROW or TCE areas to complete utility work. The Murrieta Creek Phase 1 ROW and TCE areas are not intended to be restricted for the sole use of the Contractor.

#### 3.17.9 CONSTRUCTION TIMING CONSTRAINTS

### 3.17.9.1 WATER RESOURCES

Channel construction and maintenance activities will not be conducted from December 1, 2003 through February 28, 2004, inclusive, to avoid winter rains and correspondingly reduce the potential for significant water quality impacts.

Whenever possible, confine construction work within flood control channel to low-flow periods. All construction activities within channel would be limited during wet weather.

### 3.17.9.2 BIOLOGICAL RESOURCES

- A) CLEARING AND GRUBBING - Riparian vegetation exists within the channel that cannot be removed during the nesting season from March 15, 2004 through July 30, 2004, inclusive. Therefore, all clearing and grubbing shall be completed prior to March 15, 2004.
- B) SOUTHWESTERN POND TURTLES - Trapping for southwestern pond turtles within all suitable pools within the construction area in the southern portion of the project area shall occur prior to the onset of construction. At least one trapping event will occur 30 calendar days prior to start of construction. Details and methods of turtle relocation shall be determined by the COE in consultation with USFWS. The COE shall be responsible for providing the acceptable biological monitor and turtle trapping organization, with either the ERB/Ecosystem Planning Section biologist or a contractor biologist supplied by the ERB/Ecosystem Planning Section staff, will conduct the surveys and trapping in coordination with the ERB/Ecosystem Planning System biologist and USFWS staff. The Contractor may participate in this event, however, no separate payment will be made to the Contractor for participation in the Southwestern Pond Turtle monitoring, trapping and if necessary, relocation.
- C) NOISE - Construction within 1000 ft of residences or other noise sensitive uses will be restricted to daytime hours. No construction or maintenance activities within 1000 feet of noise sensitive uses on Sunday, on legal holidays or between 7 p.m. and 6:30 a.m. from Monday night through Friday morning and between 7 p.m. and 8 a.m. from Friday night through Saturday morning.

### 3.18 CONTRACTOR'S SURVEYS

#### 3.18.1 Survey Data

Reference is made to SECTION 00800: SPECIAL CONTRACT REQUIREMENTS, QUANTITY SURVEYS, ALTERNATE I, FAR 52.236-16 which requires payments based on surveys. Progress payments will be based upon Contractor's surveys. The Contractor's survey shall provide full coverage of the entire area for which progress payment is being submitted.

It is further emphasized that survey data which does not meet all applicable requirements and quality assurance verifications will not

constitute a valid request for payment.

Contractor's surveys shall be performed electronically (automated) and the data shall be provided and submitted to the Government on an electronic media (IBM compatible, ASCII format) in delimited files of easting, northing, and depth (x,y,z), where the depth is indicated as positive if recorded above mean sea level. The first lines of the data file will list the information as follows (Note this is an example):

- \* Project Name: Murrieta Creek Phase 1; ENTIRE PROJECT SITE, FY2003
- \* Surveyor's Name and Company Name
- \* Area Surveyed
- \* Type of Survey and Date of Survey (i.e. Pre-construction, MM/DD/YR)
- \* Vertical Datum
- \* Horizontal Datum

These first 6 lines will be preceded by an asterisk (\*), which indicates a comment line.

For all of the pre-construction and post construction surveys, three (3) copies of the survey plotted on paper will accompany the x,y,z data (electronic file) and all data shall be collected and plotted in english units (feet).

### 3.18.2 Survey Data Standards

The Contractor's surveys for progress payment shall meet or exceed the survey standards listed in EM 1110-1-1005, Topographic Surveying for topographic surveys. Surveys shall be in the State Plane Coordinate System as follows:

- a) Horizontal Control shall be tied to the California HARN, 2000-35 Epoch based on NAD83, in the California Lambert Zone 6, U.S. survey feet.
- b) Vertical Control shall be of third order accuracy or better based on bench marks provided by the Corps of Engineers or the National Geodetic Survey, NAVD88.

Surveys shall be performed by an independent survey contractor with at least three (3) years of experience in topographic surveying of land features and have either a current Land Surveyor's or a Professional Engineer's license, authorized to certify surveys in the State of California. The Topographic Surveyor firm selected by the Contractor must be approved by the Contracting Officer prior to performing surveys for this contract.

#### 3.18.2.1 Additional Requirements for Survey Data

Unless otherwise noted, all topographic surveys shall be at 1 foot contour intervals and shall have cross sections at 20 foot intervals.

### 3.18.3 Positioning System

It is required that surveys shall be conducted using an RTK or similar

modern electronic surveying equipment using Differential Global Positioning System (DGPS) with positional accuracy equal to or exceeding the survey standards listed in EM 1110-1-1003 and EM 1110-1-1005.

#### 3.18.4 Survey Firm Acceptance

For the Contracting Officer to approve the selected survey firm, the Contractor must provide documentation indicating that modern electronic surveying equipment will be used for the surveys to be performed as well as documentation verifying the experience of the operators using the equipment. Typical information that will be required, as a minimum, includes the name, model, and year of manufacture of the electronic equipment, and the manufacturer's stated accuracies, and capability of the equipment proposed for usage. The Contractor shall submit credentials/qualifications as evidence that qualified, experienced staff are available and will be used for the operation of the electronic positioning and surveying equipment.

#### 3.18.5 Data Processing

The Contractor shall use a Data Processing System to map the survey data and calculate quantities. Reduced survey data shall then be imported into the Data Processing System where cross-sections are compared to fill templates and volume quantities are calculated. The software shall be capable of digital terrain modeling and shall produce, as a minimum, topographic survey sheets, cross section profiles, 3-dimensional area profiles, and quantity volume calculations using the Triangulated Irregular Network (TIN) method.

#### 3.19 INSPECTION

Reference is made to the clause of the contract entitled: INSPECTION OF CONSTRUCTION. In addition, the Contractor will be required:

- a. To furnish, on the request of the Contracting Officer or any inspector, the use of such laborers and material forming a part of the ordinary and usual equipment and crew of the plant as may be reasonably necessary in inspecting and supervising the work.
- b. To furnish, on the request of the Contracting Officer or any inspector, suitable transportation from all points designated by the Contracting Officer to and from the various pieces of plant, and to and from the work areas. Should the Contractor refuse, neglect, or delay compliance with these requirements, the specific facilities may be furnished and maintained by the Contracting Officer, and the cost thereof will be deducted from any amounts due or to become due the Contractor.
- c. To allow authorized representatives of the California Regional Water Quality Control Board and the South Coast Air Quality Management District to:

enter upon the Contractor's premises where a regulated facility or activity is located or conducted, or where records are kept;

have access to and copy, at reasonable times, any records that must be kept per agency requirements; inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated by these agencies;

and sample or monitor at reasonable times any substances or parameters at any location for the purpose of assuring compliance with agency regulations.

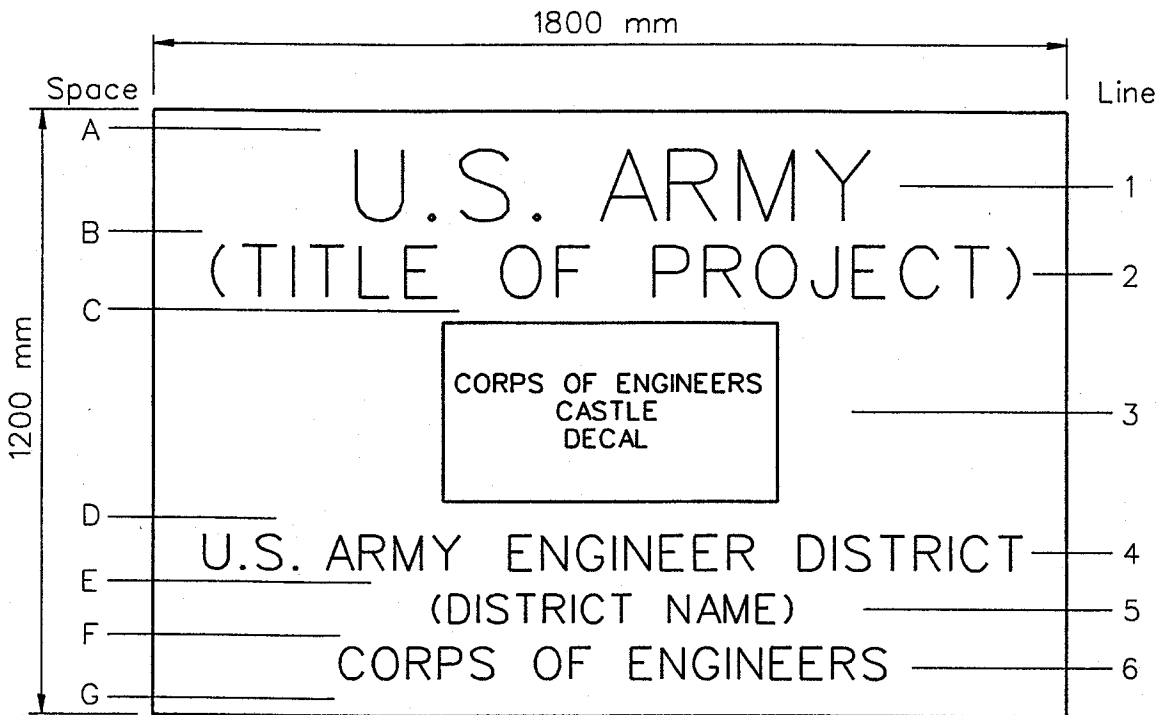
### 3.20 Pre-Construction and Post-Construction Surveys, except Optional Disposal Site

Prior to the start of construction work (including clear site and remove obstructions, the Contractor shall conduct a pre-construction topographic survey of the entire project site, except optional disposal site in accordance with paragraph CONTRACTOR'S SURVEYS in this section.

At the end of all work associated with this section, the Contractor shall conduct a post-construction topographic survey of the entire project site, except optional disposal site in accordance with paragraph CONTRACTOR'S SURVEYS in this section.

-- End of Section --

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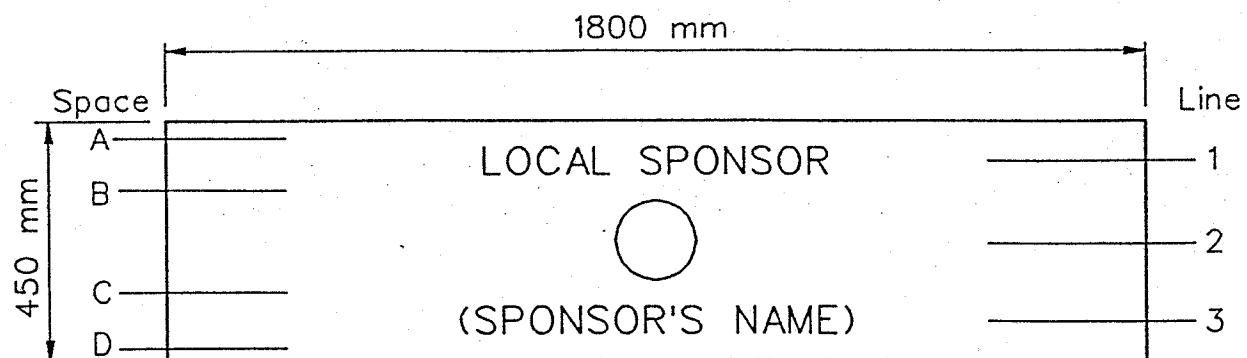
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B	50	1	U.S. ARMY	140	22
C	50	2	PROJECT NOMENCLATURE	100	16
		3	CORPS OF ENGINEERS CASTLE (DECAL)	345	
D	70	4	U.S. ARMY ENGINEER DISTRICT	70	9
E	50	5	DISTRICT NAME	60	6
F	50	6	CORPS OF ENGINEERS	65	9
G	75				

Letter Color -- Black

PROJECT SIGN  
(Army-Civil Works)

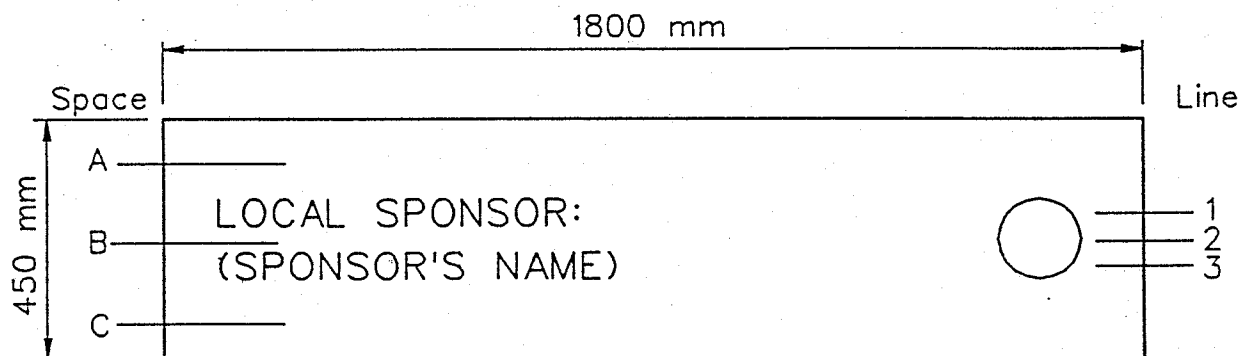
Figure 1  
October 1996

All units are in millimeters.



Space	Height	Line	Description	Letter Height	Stroke
A	50	1	LOCAL SPONSOR	50	9
B	50	2	SPONSOR'S EMBLEM (DECAL)		
C	50	3	(SPONSOR'S NAME)	50	9
D	50				

- OR -



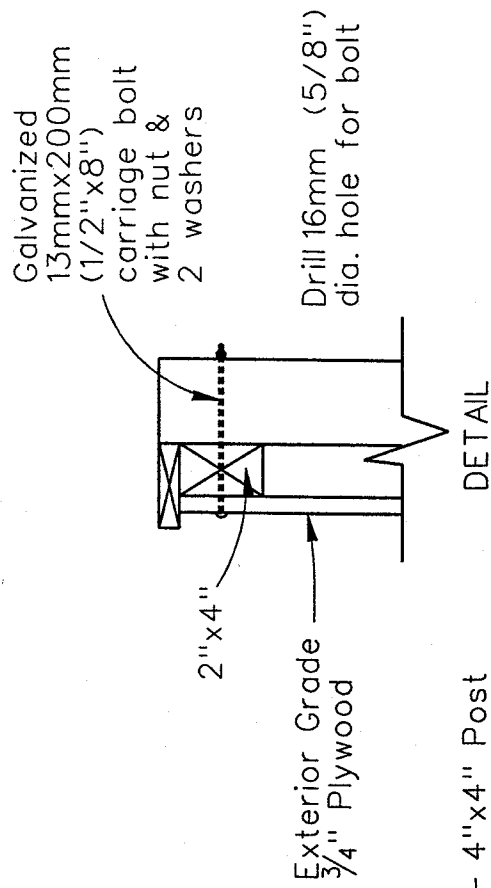
Space	Height	Line	Description	Letter Height	Stroke
A	150	1	LOCAL SPONSOR	50	9
B	50	2	SPONSOR'S EMBLEM (DECAL)		
C	150	3	(SPONSOR'S NAME)	50	9

Lettering Color -- Black

All units are in millimeters.

Figure 1A  
October 1997





SECTION

ELEVATION

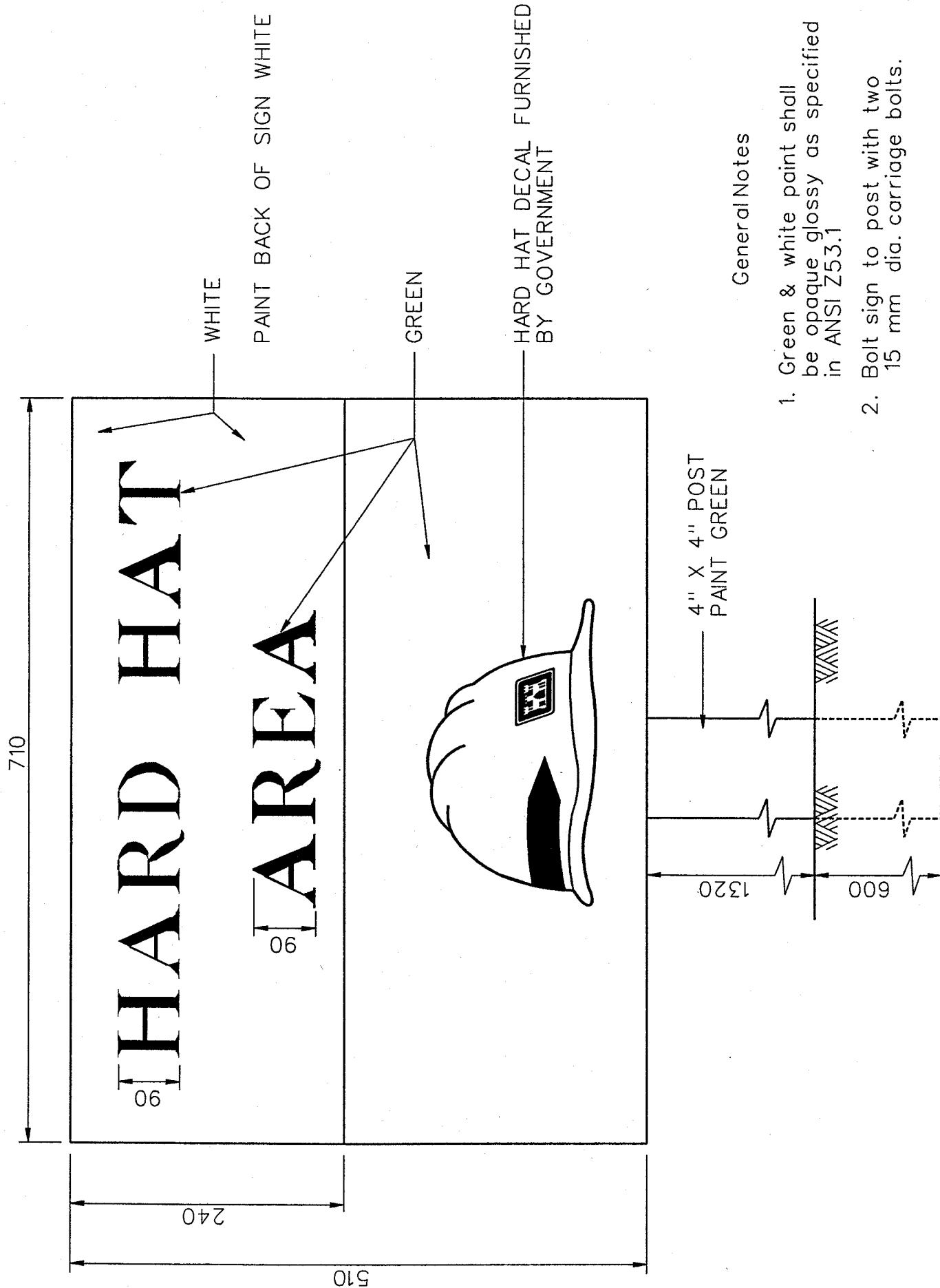
### General Notes

1. Lumber to be cut & formed accurately.
2. Secure 1"x4" & plywood with 6d finish nails at not less than 305mm(12") O.C.
3. All exposed nails to be set & holes filled with putty.
4. Sign to be set in good solid ground & backfill carefully tamped into place.
5. Where necessary, posts shall be braced to provide a solid installation.

SIGN DETAILS

Figure 2  
October 1996

All units are in millimeters unless otherwise indicated.

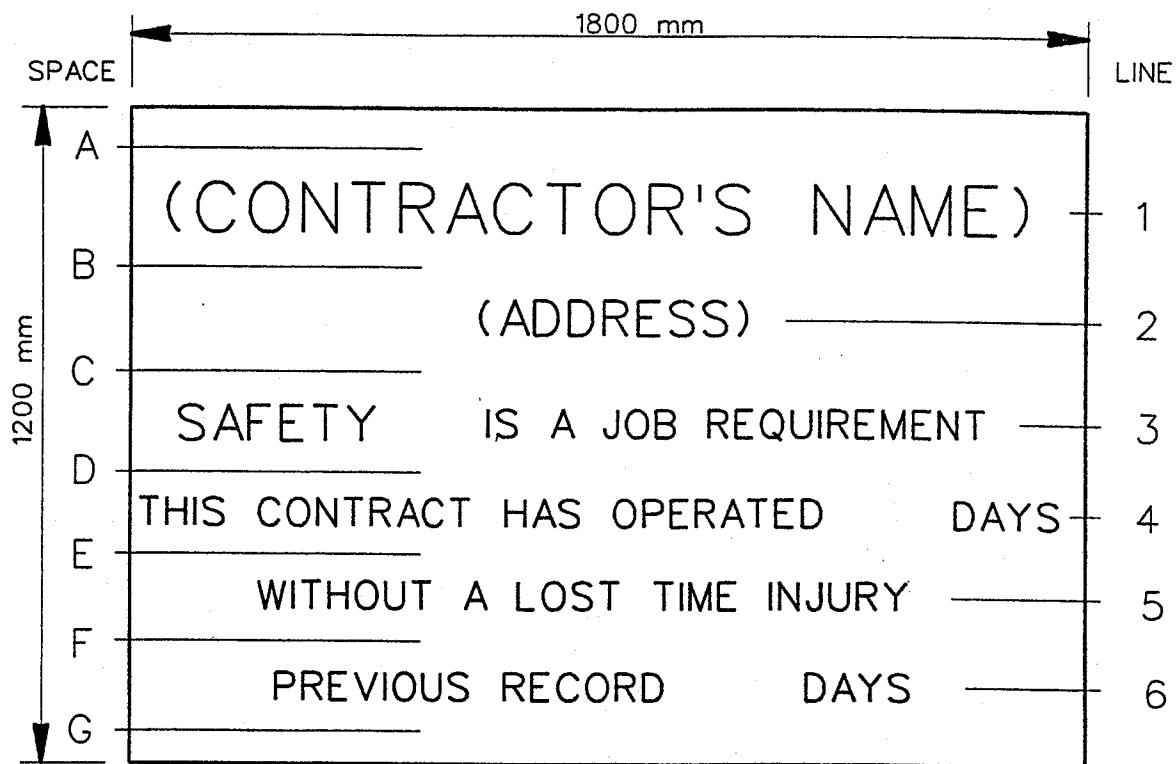


#### General Notes

1. Green & white paint shall be opaque glossy as specified in ANSI Z53.1
2. Bolt sign to post with two 15 mm dia. carriage bolts.

Figure 3  
October 1996

All units are in millimeters unless otherwise indicated.



<u>SPACE</u>	<u>HEIGHT</u>	<u>LINE</u>	<u>DESCRIPTION</u>	<u>LETTER HEIGHT</u>
A	125			
B	75	1	CONTRACTOR'S NAME	125
C	150	2	ADDRESS	75
D	75	3	SAFETY IS A JOB REQUIREMENT	115 & 75
E	75	4	ALL LETTERING	75
F	75	5	ALL LETTERING	75
G	125	6	ALL LETTERING	75

**Notes**

Lettering shall be black No. 27038 standard 595.  
 Sign shall be installed in the same manner  
 as the Project Sign.

All units are in millimeters.

**SAFETY SIGN  
 STANDARD DETAIL**

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## SECTION 01270

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## SECTION 01270

## MEASUREMENT AND PAYMENT

## PART 1 GENERAL

## 1.1 LUMP SUM PAYMENT ITEMS

Payment items for the work of this contract for which contract lump sum payments will be made are listed in the BIDDING SCHEDULE and described below. All costs for items of work, which are not specifically mentioned to be included in a particular lump sum or unit price payment item, shall be included in the listed lump sum item most closely associated with the work involved. The lump sum price and payment made for each item listed shall constitute full compensation for furnishing all plant, labor, materials, and equipment, and performing any associated Contractor quality control, environmental protection, meeting safety requirements, tests and reports, and for performing all work required for which separate payment is not otherwise provided.

## 1.1.1 Diversion and Control of Water (Bid Item 0001)

Payment for Diversion and Control of Water will be made at the applicable contract price, which payment shall constitute full compensation for control of storm water, irrigation, and miscellaneous runoffs to prevent adverse impacts to the project or downstream properties.

## 1.1.2 Clear Site and Remove Obstructions (Bid Item 0002)

Payment for Clear Site and Remove Obstructions will be made at the applicable contract price, which payment shall constitute full compensation for clearing debris and vegetation and grubbing areas of excavation, areas to be graded, areas to receive fill, or other approved areas necessary for the Contractor's operations within the limits of the designated temporary construction easement; disposal off-site of all vegetation and existing debris such as old pavement, tree trimmings, trash, furniture and appliances, car bodies and car parts, etc; removing and plugging abandoned waterline; and the protection of existing facilities to remain in place, and scheduling and coordination of the work to comply with Section 01200 GENERAL REQUIREMENTS, paragraph ENVIRONMENTAL ASSESSMENT REQUIREMENT. Payment will also include demolition, clearing & removal of buildings or other structures, fences, and embankments within the limits of the rights of way including but not limited to the VFW Hall, Skating rink, BMX track and including foundations, subgrade structures, utilities and all features associated with the removed structure.

## 1.1.3 East Ditch (Bid Item 0011)

Payment for East Ditch will be made at the applicable contract price, which payment shall constitute full compensation for constructing the east graded ditch, complete, including earthwork; concrete gutters; grouted stone

slope; and all incidentals. The earthwork included in this item shall be only that earthwork which is located outside the limits of earthwork for which other payment is provided.

#### 1.1.4 West Ditch (Bid Item 0012)

Payment for East Ditch will be made at the applicable contract price, which payment shall constitute full compensation for constructing the west concrete ditch, complete, including earthwork; furnishing and placing reinforcing steel; furnishing, placing, finishing and curing concrete; connection to grouted stone side drain; and all incidentals. The earthwork included in this item shall be only that earthwork which is located outside the limits of earthwork for which other payment is provided.

#### 1.1.5 Landscaping (Bid Item 0016)

Payment for Landscaping will be made at the applicable contract price, which payment shall constitute full compensation for labor, materials, and equipment for the trees and shrubs planted in the landscaping area, complete. Payment will include obtaining the plant material, topsoil, soil amendments, erosion control material, wood staking material, mycorrhizal fungi inoculum, water, decomposed wood derivatives, and pesticide. Payment will also include excavation, backfilling, soil preparation, plant establishment, weed abatement, watering, and maintenance.

#### 1.1.6 Mitigation Plantings (Bid Item 0017)

Payment for Mitigation Plantings will be made at the applicable contract price, which payment shall constitute full compensation for labor, materials, and equipment for the trees, shrubs and cuttings planted in the mitigation area, complete. Payment will include obtaining the plant material, topsoil, soil amendments, erosion control material, wood staking material, mycorrhizal fungi inoculum, water, decomposed wood derivatives, and pesticide. Payment will also include excavation, backfilling, soil preparation, plant establishment, weed abatement, watering, and maintenance.

#### 1.1.7 Hydroseeding (Bid Item 0018)

Payment for Hydroseeding will be made at the applicable contract price, which payment shall constitute full compensation for providing all labor, materials, and equipment for the hydroseeding complete. Payment will include obtaining seed mixtures, topsoil, amendments, mulch, fertilizers, tackifier, water, and pesticide; application of the hydroseeding mixture, mulch and tackifier in two separate applications; site preparation; and watering, weed control, and maintenance, as specified in Section 02921 HYDROSEEDING. Payment will not include seeding or reseeding of areas, or reworking of landscape areas required as a result of Contractor's negligence or damages caused by Contractor.

#### 1.1.8 Broadcast Seeding (Bid Item 0019)

Payment for Broadcast Seeding will be made at the applicable contract price, which payment shall constitute full compensation for providing all labor, materials, and equipment for the broadcast seeding complete.



Payment will include obtaining seed mixtures, topsoil, amendments, water, fertilizers and pesticide; site preparation; and watering, weed control, and maintenance, as specified in Section 02921 HYDROSEEDING. Payment will not include seeding or reseeding of areas, or reworking of landscape areas required as a result of Contractor's negligence or damages caused by Contractor.

#### 1.1.9 Irrigation (Bid Item 0020)

Payment for Irrigation will be made at the applicable contract price, which payment shall constitute full compensation for providing all labor, materials, equipment, and installation of the irrigation system beginning at the POC, including main and lateral piping with associated valves, components and fittings, bubblers, sprinkler heads, impact heads, pop-up heads, water meters, backflow preventors, automatic controllers (24 station and enclosure), master control valves, valve markers, flow sensors, remote control valves, quick couplers, air relief valves, flush valves and electrical wiring from POC to controller and from controllers to remote control valves, complete in place. Payment will also include all necessary excavation, backfilling, and compaction of pipe trenches. All costs associated with permit fees, monthly electric and water bills shall also be included in this item throughout the entire maintenance period until final acceptance of the irrigation system, landscaping, and plantings.

#### 1.1.10 Pipe Access Gate (Bid Item 0021)

Payment for Pipe Access Gate and Appurtenances and Bollards will be made at the applicable contract price, which payment shall constitute full compensation for fabricating and installing the pipe access gate and appurtenances and bollards, complete, including earthwork; pipe structures, including furnishing, placing, finishing and curing concrete; and all incidentals, except padlock which will be provided by Riverside County Flood Control District. The earthwork included in this item shall be only that earthwork which is located outside the limits of earthwork for which other payment is provided.

### 1.2 UNIT PRICE PAYMENT ITEMS

Payment items for the work of this contract on which the contract unit price payments will be made are listed in the BIDDING SCHEDULE and described below. The unit price and payment made for each item listed shall constitute full compensation for furnishing all plant, labor, materials, and equipment, and performing any associated Contractor quality control, environmental protection, meeting safety requirements, tests and reports, and for performing all work required for each of the unit price items.

#### 1.2.1 Excavation

##### 1.2.1.1 Measurement

Unless specified or approved otherwise, excavation items will be measured for payment by computing the volume in cubic yards, using plotted surveyed cross sections and the average end area method. Excavated materials will

measured for payment from its original position. Paylines for excavation will be as shown on the plans. No measurement for payment will be made for over excavation, nor for construction, removal of haul roads, dressing, drainage and road surfacing materials, or for the disposal of the excavated materials from over excavation and construction and maintenance of access haul roads.

1.2.1.2 Payment for Excavation, Channel, Sta. 32+50 to Sta. 39+00 (Bid Item 0003)

Payment for Excavation, Sta. 32+50 to Sta. 39+00 will be made at the applicable contract price, which payment constitutes full compensation for excavating, hauling, stockpiling, processing, and disposition of all excavated material.

1.2.1.3 Payment for Excavation, Channel, Sta. 39+00 to Sta. 60+00 (Bid Item 0004)

Payment for Excavation, Sta. 39+00 to Sta. 60+00 will be made at the applicable contract price, which payment constitutes full compensation for excavating, hauling, stockpiling, processing, and disposition of all excavated material.

1.2.2 Fills

1.2.2.1 Measurement

Measurement for Payment for Compacted Fill will be made between the required excavation and the fill limit lines, or between the ground lines and fill lines, as indicated or staked in the field. Quantities will be computed in cubic yards by the average end area method and the planimeter will be considered a precise instrument for measuring plotted cross sections. No measurement for payment will be made for backfill of any over excavation for temporary access and haul roads for the Contractor's convenience.

1.2.2.2 Payment for Compacted Fill (Bid Item 0005)

Payment for Compacted Fill will be made at the applicable contract price, which payment shall constitute full compensation for obtaining any necessary material, foundation preparation, placing, slope benching, spreading, discing and compacting the fill, complete.

1.2.2.3 Payment for Miscellaneous Fill (Bid Item 0006)

Payment for Miscellaneous Fill will be made at the applicable contract price, which payment shall constitute full compensation for obtaining any necessary material, placing, grading and spreading the fill, complete.

1.2.3 Geotextile (Bid Item 0007)

1.2.3.1 Measurement

Installed geotextiles will be measured for payment in place to the nearest

square yard of protected area as delineated in the drawings.

#### 1.2.3.2 Payment

Payment for Geotextile will be made at the contract unit price, which price shall constitute full compensation for providing all plant, labor, material, and equipment and performing all operations necessary for the complete and satisfactory installation of the geotextile. The following items are included in the contract unit price for geotextile and shall not be counted a second time in the process of determining the extent of geotextile placed: Material and associated equipment and operation used in laps, seams, or extra length; securing pins and associated material, equipment, and operations; and material and associated equipment and operations used to provide cushioning layer of sand or gravel or both to permit increase in allowable drop height of stone. No payment will be made for geotextiles replaced because of waste, contamination, damage, repair, or due to contractor fault or negligence.

#### 1.2.4 Grouted Stone Invert Stabilizer (Bid Item 0008)

##### 1.2.4.1 Measurement

Measurement of invert stabilizer will be made on the basis of the actual volume, in cubic yards, of grouted stone within the pay lines of the stabilizer structure as indicated on the drawings. Measurement of grouted stone placed against the sides of any excavation without the use of intervening forms will be made only within the pay lines of the grouted stone structure. No deductions will be made for rounded or beveled edges or space occupied by metalwork, nor voids or embedded items which are either less than 0.15 cubic yard in volume or one-tenth of square yard in cross section. Grouted stone placed in items of work other than those specifically mentioned above, and grouted stone and grout and stone wasted or used for the convenience of the Contractor will not be included in measurement for payment.

##### 1.2.4.2 Payment

Payment for Grouted Stone Stabilizer will be made at the applicable contract unit price, which payment shall constitute full compensation for obtaining and placing the grouted stone and grout, complete. Payment for the grouted stone invert stabilizer will not include excavation and compacted fill for which separate payment is provided.

#### 1.2.5 Grouted Stone Access Ramps (Bid Item 0009)

##### 1.2.5.1 Measurement

Measurement of the grouted stone access ramps stonework will be made on the basis of the actual volume, in cubic yards, of grouted stone within the pay lines of the access (invert) ramps as indicated on the drawings. Measurement of the grouted stone placed against the sides of any excavation without the use of intervening forms will be made only within the pay lines of the grouted stone structure. No deductions will be made for rounded or beveled edges or space occupied by metalwork, nor voids or embedded items

which are either less than 0.15 cubic yard in volume or one-tenth of square yard in cross section. Grouted stone placed in items of work other than that specifically mentioned above, and grouted stone and grout and stone wasted or used for the convenience of the Contractor will not be included in measurement for payment.

#### 1.2.5.2 Payment

Payment for Grouted Stone Access Ramps will be made at the applicable contract unit price, which payment shall constitute full compensation for obtaining and placing the stone and grout, excluding excavation and compacted fill that is included in separate bid items for excavation, channel, and compacted fill, channel; including pipe access gate installed at top of access ramp and all appurtenances; complete, as indicated on the drawings.

#### 1.2.6 Riprap (Bid Item 0010)

##### 1.2.6.1 Measurement

Measurement of riprap will be by the cubic yard of riprap placed within the lines and grades indicated on the drawings for riprap. The earth cover shall be placed to the lines and grades shown on the drawings.

##### 1.2.6.2 Payment

Payment for Riprap will be made at the applicable contract unit price per cubic yard, which payment shall constitute full compensation for work required for furnishing, placing and installation of riprap, complete, including cut-off walls. Other earthwork, including excavation but excluding miscellaneous fill, are to be paid for under the paragraph of this section: EXCAVATION.

#### 1.2.7 Decomposed Granite Surfacing (Bid Item 0013)

##### 1.2.7.1 Measurement

Measurement of decomposed granite surfacing will be by the ton (2,000 pounds) of the surfacing course placed within the lines and grades indicated on the drawings for road.

##### 1.2.7.2 Payment

Payment for Decomposed Granite Surfacing will be made at the applicable contract unit price per ton, which payment shall constitute full compensation for work required for installation of decomposed granite base course, furnishing, placing, and compacting the decomposed granite base course, complete, including subgrade preparation.

#### 1.2.8 Aggregate Base Course (Bid Item 0014)

##### 1.2.8.1 Measurement

Measurement of aggregate base course will be by the ton (2,000 pounds) of

aggregate base course placed within the lines and grades indicated on the drawings for road base.

1.2.8.2 Payment

Payment for Aggregate Base Course will be made at the applicable contract unit price per ton, which payment shall constitute full compensation for work required for installation of aggregate base course, furnishing, placing, and compacting the aggregate base course, complete, including subgrade preparation.

1.2.9 Asphalt Concrete Pavement (Bid Item 0015)

1.2.9.1 Measurement

Measurement for asphalt concrete pavement will be by the ton (2,000 pounds) of asphalt concrete pavement placed within the lines and grades as indicated on the drawings.

1.2.9.2 Payment

Payment for Asphalt Concrete Pavement will be made at the applicable contract price which payment shall constitute full compensation for asphalt concrete pavement in place, complete including tack coat, and appurtenant work except for aggregate base course. No payment will be made for excessive thickness.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

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## SECTION 01312

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## SECTION 01312

## RESIDENT MANAGEMENT SYSTEM (RMS)

## PART 1 GENERAL

The Government will use the Resident Management System for Windows (RMS-W) to assist in its monitoring and administration of this contract. The Contractor shall use the Government-furnished Construction Contractor Module of RMS-Windows, referred to as RMS-QC (QC for Quality Control), to record, maintain, and submit various information throughout the contract period. This joint Government-Contractor use of RMS-W and RMS-QC will facilitate electronic exchange of information and overall management of the contract. RMS-QC provides the means for the Contractor to input, track, and electronically share information with the Government in the following areas:

- Administration
- Finances
- Quality Control
- Submittal Monitoring
- Scheduling
- Import/Export of Data

## 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

## U. S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(1996) U.S. Army Corps of Engineers Safety and Health Requirements Manual
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## 1.2 Correspondence and Electronic Communications

For ease and speed of communications, both Government and Contractor will, to the maximum extent feasible, exchange correspondence and other documents in electronic format. Correspondence, pay requests and other documents comprising the official contract record shall also be provided in paper format, with signatures and dates where necessary. Paper documents will govern, in the event of discrepancy with the electronic version.

## 1.3 Other Factors

Particular attention is directed to Contract Clause, "Schedules for Construction Contracts", Contract Clause, "Payments", Section 01330, SUBMITTAL PROCEDURES, and Section 01451, CONTRACTOR QUALITY CONTROL, which have a direct relationship to the reporting to be accomplished through RMS-QC. Also, there is no separate payment for establishing and

maintaining the RMS-QC database; all costs associated therewith shall be included in the contract pricing for the work.

#### 1.4 RMS-QC SOFTWARE

RMS-QC is a Windows-based program that can be run on a stand-alone personal computer or on a network. The Government will make available the RMS-QC software to the Contractor after award of the construction contract. Prior to the Pre-Construction Conference, the Contractor shall be responsible to download, install and use the latest version of the RMS-QC software (version 2.32 for QCS) from the Government's RMS Internet Website (winrms.usace.army.mil). Upon specific justification and request by the Contractor, the Government can provide RMS-QC on 3-1/2" high-density diskettes or CD-ROM. Any program updates of RMS-QC will be made available to the Contractor via the Government RMS Website as they become available.

#### 1.5 SYSTEM REQUIREMENTS

The following listed hardware and software is the minimum system configuration that the Contractor shall have to run RMS-QC:

##### Hardware

IBM-compatible PC with 200 MHz Pentium or higher processor  
32+ MB RAM  
4 GB hard drive disk space for sole use by the RMS-QC system  
3 1/2 inch high-density floppy drive  
Compact disk (CD) Reader  
Color monitor  
Laser printer compatible with HP LaserJet III or better, with minimum 4 MB installed memory.  
Connection to the Internet, minimum 28 BPS

##### Software

Microsoft (MS) Access 97 or newer version database software  
MS Windows 95 or newer version operating system (MS Windows NT 4.0 or newer is recommended)  
Word Processing software compatible with MS Word 97 or newer  
Internet browser

The Contractor's computer system shall be protected by virus protection software that is regularly upgraded with all issued manufacturer's updates throughout the life of the contract.

Electronic mail (E-mail) compatible with MS Outlook

## 1.6 RELATED INFORMATION

### 1.6.1 RMS-QC User Guide

After contract award, the Contractor shall download instructions for the installation and use of RMS-QC from the Government RMS Internet Website; the Contractor can obtain the current address from the Government. In case of justifiable difficulties, the Government will provide the Contractor with a CD-ROM containing these instructions.

### 1.6.2 Contractor Quality Control(CQC) Training

The use of RMS-QC will be discussed with the Contractor's QC System Manager during the mandatory CQC Training class.

## 1.7 CONTRACT DATABASE

Prior to the pre-construction conference, the Government shall provide the Contractor with basic contract award data to use for RMS-QC. The Government will provide data updates to the Contractor as needed, generally by files attached to E-mail. These updates will generally consist of submittal reviews, correspondence status, QA comments, and other administrative and QA data.

## 1.8 DATABASE MAINTENANCE

The Contractor shall establish, maintain, and update data for the contract in the RMS-QC database throughout the duration of the contract. The Contractor shall establish and maintain the RMS-QC database at the Contractor's site office. Data updates to the Government shall be submitted by E-mail with file attachments, e.g., daily reports, schedule updates, payment requests. If permitted by the Contracting Officer, a data diskette or CD-ROM may be used instead of E-mail (see Paragraph DATA SUBMISSION VIA COMPUTER DISKETTE OR CD-ROM). The RMS-QC database typically shall include current data on the following items:

### 1.8.1 Administration

#### 1.8.1.1 Contractor Information

The database shall contain the Contractor's name, address, telephone numbers, management staff, and other required items. Within 14 calendar days of receipt of RMS-QC software from the Government, the Contractor shall deliver Contractor administrative data in electronic format via E-mail.

#### 1.8.1.2 Subcontractor Information

The database shall contain the name, trade, address, phone numbers, and other required information for all subcontractors. A subcontractor must be listed separately for each trade to be performed. Each subcontractor/trade

shall be assigned a unique Responsibility Code, provided in RMS-QC. Within 14 calendar days of receipt of RMS-QC software from the Government, the Contractor shall deliver subcontractor administrative data in electronic format via E-mail.

#### 1.8.1.3 Correspondence

All Contractor correspondence to the Government shall be identified with a serial number. Correspondence initiated by the Contractor's site office shall be prefixed with "S". Letters initiated by the Contractor's home (main) office shall be prefixed with "H". Letters shall be numbered starting from 0001. (e.g., H-0001 or S-0001). The Government's letters to the Contractor will be prefixed with "C".

#### 1.8.1.4 Requests for Information

RMS-QC includes a means for the Contractor to enter, log, and transmit requests for information (RFI) to the Government. RFIs can be exchanged electronically using the import/export functions of RMS-QC. The Contractor shall also provide the Government with a signed, printed copy of each RFI. All RFIs from the Contractor to the Government shall have the prefix "RFI" and shall be numbered sequentially beginning with RFI-0001.

#### 1.8.1.5 Equipment

The Contractor's RMS-QC database shall contain a current list of equipment planned for use or being used on the jobsite, including the most recent and planned equipment inspection dates.

#### 1.8.1.6 EM 385-1-1, Corps of Engineers Safety Manual and RMS Linkage

Upon request, the Contractor can obtain a copy of the current version of the Corps of Engineers Safety Manual, EM 385-1-1, on CD. Data on the CD will be accessible through RMS-QC, or in stand-alone mode.

#### 1.8.1.7 Management Reporting

RMS-QC includes a number of reports that Contractor management can use to track the status of the project. The value of these reports is reflective of the quality of the data input, and is maintained in the various sections of RMS-QC. Among these reports are: Progress Payment Request worksheet, QA/QC comments, Submittal Register Status, Three-Phase Inspection checklists.

### 1.8.2 Finances

#### 1.8.2.1 Pay Activity Data

The RMS-QC database shall include a list of pay activities that the Contractor shall develop in conjunction with the construction schedule. The sum of all pay activities shall be equal to the total contract amount, including modifications. Pay activities shall be grouped by Contract Line Item Number (CLIN), and the sum of the activities shall equal the amount of each CLIN. The total of all CLINs equals the Contract Amount.

#### 1.8.2.2 Payment Requests

All progress payment requests shall be prepared using RMS-QC. The Contractor shall complete the payment request worksheet and include it with the payment request. The work completed under the contract, measured as percent or as specific quantities, shall be updated at least monthly. After the update, the Contractor shall generate a payment request report using RMS-QC. The Contractor shall submit the payment requests with supporting data by E-mail with file attachment(s). If permitted by the Contracting Officer, a data diskette may be used instead of E-mail. A signed paper copy of the approved payment request is also required, which shall govern in the event of discrepancy with the electronic version.

#### 1.8.3 Quality Control (QC)

RMS-QC provides a means to track implementation of the 3-phase QC Control System, prepare daily reports, identify and track deficiencies, document progress of work, and support other contractor QC requirements. The Contractor shall maintain this data on a daily basis. Entered data will automatically output to the RMS-QC generated daily report. The Contractor shall provide the Government a Contractor Quality Control (CQC) Plan within the time required in Section 01451, CONTRACTOR QUALITY CONTROL. Within seven calendar days of Government acceptance, the Contractor shall submit a data diskette or CD-ROM reflecting the information contained in the accepted CQC Plan: schedule, pay activities, features of work, submittal register, QC requirements, and equipment list.

##### 1.8.3.1 Daily Contractor Quality Control (CQC) Reports.

RMS-QC includes the means to produce the Daily CQC Report. The Contractor may use other formats to record basic QC data. However, the Daily CQC Report generated by RMS-QC shall be the Contractor's official report. Data from any supplemental reports by the Contractor shall be summarized and consolidated onto the RMS-QC-generated Daily CQC Report. Daily CQC Reports shall be submitted as required by Section 01451, CONTRACTOR QUALITY CONTROL. Reports shall be submitted electronically to the Government using E-mail or diskette within 24 hours after the date covered by the report. Use of either mode of submittal shall be coordinated with the government representative. The Contractor shall also provide the Government a signed, printed copy of the daily CQC report.

##### 1.8.3.2 Deficiency Tracking.

The Contractor shall use RMS-QC to track deficiencies. Deficiencies identified by the Contractor will be numerically tracked using QC Comments.

The contractor shall maintain a current log of its QC comments in the RMS-QC database. The Government will log the deficiencies it has identified using its QA comments. The Government's QA comments will be included in its export file to the Contractor. The Contractor shall regularly update the correction status of both QC and QA comments.

##### 1.8.3.3 Three-Phase Control Meetings

The Contractor shall maintain scheduled and actual dates and times of preparatory and initial control meetings in RMS-QC.

#### 1.8.3.4 Accident/Safety Tracking.

The Government will issue safety comments, directions, or guidance whenever safety deficiencies are observed. The Government's safety comments will be included in its export file to the Contractor. The Contractor shall regularly update the correction status of the safety comments. In addition, the Contractor shall utilize RMS-QC to advise the Government of any accidents occurring on the jobsite. This brief supplemental entry is not to be considered as a substitute for completion of mandatory reports, e.g., ENG Form 3394 and OSHA Form 200.

#### 1.8.3.5 Features of Work

The Contractor shall include a complete list of the features of work in the RMS-QC database. A feature of work may be associated with multiple pay activities. However, each pay activity (see subparagraph "Pay Activity Data" of paragraph "Finances") will only be linked to a single feature of work.

#### 1.8.3.6 QC Requirements

The Contractor shall develop and maintain a complete list of QC testing, transferred and installed property, and user training requirements in RMS-QC. The Contractor shall update all data on these QC requirements as work progresses, and shall promptly provide this information to the Government via RMS-QC.

#### 1.8.4 Submittal Management

The Government will provide the initial submittal register, ENG Form 4288, SUBMITTAL REGISTER, in electronic format. Thereafter, the Contractor shall maintain a complete list of all submittals, including completion of all data columns as described in Section 01330, SUBMITTAL PROCEDURES. Dates on which submittals are received and returned by the Government will be included in its export file to the Contractor. The Contractor shall use RMS-QC to track and transmit all submittals. ENG Form 4025, submittal transmittal form, and the submittal register update, ENG Form 4288, shall be produced using RMS-QC. RMS will be used to update, store and exchange submittal registers and transmittals, but will not be used for storage of actual submittals.

#### 1.8.5 Schedule

The Contractor shall develop a construction schedule consisting of pay activities, in accordance with Contract Clause "Schedules for Construction Contracts". This schedule shall be input and maintained in the RMS-QC database either manually or by using the Standard Data Exchange Format (SDEF). The updated schedule data shall be included with each pay request submitted by the Contractor.

#### 1.8.6 Import/Export of Data

RMS-QC includes the ability to export Contractor data to the Government and to import submittal register and other Government-provided data, and schedule data using SDEF.

#### 1.9 IMPLEMENTATION

Contractor use of RMS-QC as described in the preceding paragraphs is mandatory. The Contractor shall ensure that sufficient resources are available to maintain its RMS-QC database, and to provide the Government with regular database updates. RMS-QC shall be an integral part of the Contractor's management of quality control.

#### 1.10 DATA SUBMISSION VIA COMPUTER DISKETTE OR CD-ROM

The Government-preferred method for Contractor's submission of updates, payment requests, correspondence and other data is by E-mail with file attachment(s). For locations where this is not feasible, the Contracting Officer may permit use of computer diskettes or CD-ROM for data transfer. Data on the disks or CDs shall be exported using the RMS-QC built-in export function. If used, diskettes and CD-ROMs will be submitted in accordance with the following:

##### 1.10.1 File Medium

The Contractor shall submit required data on 3-1/2" double-sided high-density diskettes formatted to hold 1.44 MB of data, capable of running under Microsoft Windows 95 or newer. Alternatively, CD-ROMs may be used. They shall conform to industry standards used in the United States. All data shall be provided in English.

##### 1.10.2 Disk or CD-ROM Labels

The Contractor shall affix a permanent exterior label to each diskette and CD-ROM submitted. The label shall indicate in English, the RMS-QC file name, full contract number, project name, project location, data date, name and telephone number of person responsible for the data.

##### 1.10.3 File Names

The Government will provide the file names to be used by the Contractor with the RMS-QC software.

#### 1.11 MONTHLY COORDINATION MEETING

The Contractor shall update the RMS-QC database each workday. At least monthly, the Contractor shall generate and submit an export file to the Government with schedule update and progress payment request. As required in Contract Clause "Payments", at least one week prior to submittal, the contractor shall meet with the Government representative to review the planned progress payment data submission for errors and omissions. The contractor shall make all required corrections prior to Government acceptance of the export file and progress payment request. Payment requests accompanied by incomplete or incorrect data submittals will be

returned. The Government will not process progress payments until an acceptable RMS-QC export file is received.

#### 1.12 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the requirements of this specification. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification.

-- End of Section --



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## SECTION 01330

## SUBMITTAL PROCEDURES

## PART 1 GENERAL

## 1.1 SUMMARY

## 1.1.1 Government-Furnished Information

Submittal register database and submittal management program will be delivered to the contractor, by contracting officer on 3 1/2 inch disk. Register will have the following fields completed, to the extent that will be required by the Government during subsequent usage.

Column (c): Lists specification section in which submittal is required.

Column (d): Lists each submittal description (SD No. and type, e.g. SD-04 Drawings) required in each specification section.

Column (e): Lists one principal paragraph in specification section where a material or product is specified. This listing is only to facilitate locating submitted requirements. Do not consider entries in column (e) as limiting project requirements.

Column (f): Indicate approving authority for each submittal. A "G" indicates approval by contracting officer; a blank indicates approval by QC manager.

The database and submittal management program will be extractable from the disk furnished to contractor, for operation on contractor's IBM compatible personal computer with 640kb RAM, a hard drive, and 3 1/2 inch high density floppy disk drive.

## 1.2 DEFINITIONS

## 1.2.1 Submittal

Shop drawings, product data, samples, and administrative submittals presented for review and approval. Contract Clauses "FAR 52.236-5, Material and Workmanship," paragraph (b) and "FAR 52.236-21, Specifications and Drawings for Construction," paragraphs (d), (e), and (f) apply to all "submittals."

## 1.2.2 Types of Submittals

All submittals are classified as indicated in paragraph "Submittal Descriptions (SD)". Submittals also are grouped as follows:

- a. Shop drawings: As used in this section, drawings, schedules,

diagrams, and other data prepared specifically for this contract, by contractor or through contractor by way of subcontractor, manufacturer, supplier, distributor, or other lower tier contractor, to illustrate portion of work.

- b. Product data: Preprinted material such as illustrations, standard schedules, performance charts, instructions, brochures, diagrams, manufacturer's descriptive literature, catalog data, and other data to illustrate portion of work, but not prepared exclusively for this contract.
- c. Samples: Physical examples of products, materials, equipment, assemblies, or workmanship that are physically identical to portion of work, illustrating portion of work or establishing standards for evaluating appearance of finished work or both.
- d. Administrative submittals: Data presented for reviews and approval to ensure that administrative requirements of project are adequately met but not to ensure directly that work is in accordance with design concept and in compliance with contract documents.

### 1.3 SUBMITTAL IDENTIFICATION (SD)

Submittals required are identified by SD numbers and titles as follows:

#### SD-01 Preconstruction Submittals

Certificates of insurance.  
Surety bonds.  
List of proposed subcontractors.  
Topographic Surveyor.  
List of proposed products.  
Construction Progress Schedule.  
Submittal schedule.  
Schedule of values.  
Health and safety plan.  
Work plan.  
Quality control plan.  
Environmental protection plan.

#### SD-02 Shop Drawings

Drawings, diagrams and schedules specifically prepared to illustrate some portion of the work.

Diagrams and instructions from a manufacturer or fabricator for use in producing the product and as aids to the contractor for integrating the product or system into the project.

Drawings prepared by or for the contractor to show how multiple systems and interdisciplinary work will be coordinated.

#### SD-03 Product Data

Catalog cuts, illustrations, schedules, diagrams, performance charts, instructions and brochures illustrating size, physical appearance and other characteristics of materials or equipment for some portion of the work.

Samples of warranty language when the contract requires extended product warranties.

Waybills and Delivery Tickets.

#### SD-04 Samples

Physical examples of materials, equipment or workmanship that illustrate functional and aesthetic characteristics of a material or product and establish standards by which the work can be judged.

Color samples from the manufacturer's standard line (or custom color samples if specified) to be used in selecting or approving colors for the project.

Field samples and mock-ups constructed on the project site establish standards by which the ensuring work can be judged. Includes assemblies or portions of assemblies which are to be incorporated into the project and those which will be removed at conclusion of the work.

#### SD-05 Design Data

Calculations, mix designs, analyses or other data pertaining to a part of work.

#### SD-06 Test Reports

Report signed by authorized official of testing laboratory that a material, product or system identical to the material, product or system to be provided has been tested in accord with specified requirements. (Testing must have been within three years of date of contract award for the project.)

Report which includes findings of a test required to be performed by the contractor on an actual portion of the work or prototype prepared for the project before shipment to job site.

Report which includes finding of a test made at the job site or on sample taken from the job site, on portion of work during or after installation.

Investigation reports

Daily checklists

Final acceptance test and operational test procedure

#### SD-07 Certificates

Statements signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements. Must be dated after award of project contract and clearly name the project.

Document required of Contractor, or of a supplier, installer or subcontractor through Contractor, the purpose of which is to further quality of orderly progression of a portion of the work by documenting procedures, acceptability of methods or personnel qualifications.

Confined space entry permits.

#### SD-10 Operation and Maintenance Data

Data intended to be incorporated in operations and maintenance manuals.

#### SD-11 Closeout Submittals

Documentation to record compliance with technical or administrative requirements or to establish an administrative mechanism.

As-built drawings.

Special warranties.

Posted operating instructions.

Training plan.

#### 1.3.1 Approving Authority

Person authorized to approve submittal.

#### 1.3.2 Work

As used in this section, on- and off-site construction required by contract documents, including labor necessary to produce construction and materials, products, equipment, and systems incorporated or to be incorporated in such construction.

#### 1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The "RE" designates that the Resident Office will review the submittal for the Government. Submit the following in accordance with the requirements of this section:

##### SD-01 Preconstruction Submittals

Submittal Register.

Submit submittal register in accordance with the requirements of this

section.

#### 1.5 USE OF SUBMITTAL REGISTER DATABASE

Prepare and maintain submittal register, as the work progresses. Use electronic submittal register program furnished by the Government or any other format. Do not change data which is output in columns (c), (d), (e), and (f) as delivered by government; retain data which is output in columns (a), (g), (h), and (i) as approved.

##### 1.5.1 Submittal Register

Submit submittal register as an electronic database, using submittals management program furnished to contractor. Submit with quality control plan and project schedule required by Section 01451, "CONTRACTOR QUALITY CONTROL" and Section 01200, "General Requirements." Do not change data in columns (c), (d), (e), and (f) as delivered by the government. Verify that all submittals required for project are listed and add missing submittals. Complete the following on the register database:

Column (a) Activity Number: Activity number from the project schedule.

Column (g) Contractor Submit Date: Scheduled date for approving authority to receive submittals.

Column (h) Contractor Approval Date: Date contractor needs approval of submittal.

Column (i) Contractor Material: Date that contractor needs material delivered to contractor control.

##### 1.5.2 Contractor Use of Submittal Register

Update the following fields in the government-furnished submittal register program or equivalent fields in program utilized by contractor.

Column (b) Transmittal Number: Contractor assigned list of consecutive numbers.

Column (j) Action Code (k): Date of action used to record contractor's review when forwarding submittals to QC.

Column (l) List date of submittal transmission.

Column (q) List date approval received.

##### 1.5.3 Approving Authority Use of Submittal Register

Update the following fields in the government-furnished submittal register program or equivalent fields in program utilized by contractor.

Column (b).

Column (l) List date of submittal receipt.

Column (m) through (p).

Column (q) List date returned to contractor.

#### 1.5.4 Contractor Action Code and Action Code

Entries used will be as follows (others may be prescribed by Transmittal Form):

NR - Not Received

AN - Approved as noted

A - Approved

RR - Disapproved, Revise, and Resubmit

#### 1.5.5 Copies Delivered to the Government

Deliver one copy of submitted register updated by contractor to government with each invoice request. Deliver in electronic format, unless a paper copy is requested by contracting officer.

### 1.6 PROCEDURES FOR SUBMITTALS

#### 1.6.1 Reviewing, Certifying, Approving Authority

QC organization shall be responsible for reviewing and certifying that submittals are in compliance with contract requirements. Approving authority on submittals is QC manager unless otherwise specified for specific submittal. At each "Submittal" paragraph in individual specification sections, a notation "G," following a submittal item, indicates contracting officer is approving authority for that submittal item.

#### 1.6.2 Constraints

- a. Submittals listed or specified in this contract shall conform to provisions of this section, unless explicitly stated otherwise.
- b. Submittals shall be complete for each definable feature of work; components of definable feature interrelated as a system shall be submitted at same time.
- c. When acceptability of a submittal is dependent on conditions, items, or materials included in separate subsequent submittals, submittal will be returned without review.
- d. Approval of a separate material, product, or component does not imply approval of assembly in which item functions.

#### 1.6.3 Scheduling



- a. Coordinate scheduling, sequencing, preparing and processing of submittals with performance of work so that work will not be delayed by submittal processing. Allow for potential requirements to resubmit.
- b. Except as specified otherwise, allow review period, beginning with receipt by approving authority, that includes at least 15 working days for submittals for QC manager approval and 20 working days for submittals for contracting officer approval. Period of review for submittals with contracting officer approval begins when Government receives submittal from QC organization. Period of review for each resubmittal is the same as for initial submittal.

#### 1.6.4 Variations

Variations from contract requirements require Government approval pursuant to contract Clause entitled "FAR 52.236-21, Specifications and Drawings for Construction" and will be considered where advantageous to government.

##### 1.6.4.1 Considering Variations

Discussion with contracting officer prior to submission, will help ensure functional and quality requirements are met and minimize rejections and resubmittals. When contemplating a variation which results in lower cost, consider submission of the variation as a Value Engineering Change Proposal (VECP).

##### 1.6.4.2 Proposing Variations

When proposing variation, deliver written request to the contracting officer, with documentation of the nature and features of the variation and why the variation is desirable and beneficial to government. If lower cost is a benefit, also include an estimate of the cost saving. In addition to documentation required for variation, include the submittals required for the item. Clearly mark the proposed variation in all documentation.

##### 1.6.4.3 Warranting That Variations Are Compatible

When delivering a variation for approval, contractor warrants that this contract has been reviewed to establish that the variation, if incorporated, will be compatible with other elements of work.

##### 1.6.4.4 Review Schedule Is Modified

In addition to normal submittal review period, a period of 10 working days will be allowed for consideration by the Government of submittals with variations.

#### 1.6.5 Contractor's Responsibilities

- a. Determine and verify field measurements, materials, field construction criteria; review each submittal; and check and coordinate each submittal with requirements of the work and contract documents.

- b. Transmit submittals to QC organization in accordance with schedule on approved Submittal Register, and to prevent delays in the work, delays to government, or delays to separate contractors.
- c. Advise contracting officer of variation, as required by paragraph entitled "Variations."
- d. Correct and resubmit submittal as directed by approving authority. When resubmitting disapproved transmittals or transmittals noted for resubmittal, the contractor shall provide copy of that previously submitted transmittal including all reviewer comments for use by approving authority. Direct specific attention in writing or on resubmitted submittal, to revisions not requested by approving authority on previous submissions.
- e. Furnish additional copies of submittal when requested by contracting officer, to a limit of 20 copies per submittal.
- f. Complete work which must be accomplished as basis of a submittal in time to allow submittal to occur as scheduled.
- g. Ensure no work has begun until submittals for that work have been returned as "approved," or "approved as noted", except to the extent that a portion of work must be accomplished as basis of submittal.

#### 1.6.6 QC Organization Responsibilities

- a. Note date on which submittal was received from contractor on each submittal.
- b. Review each submittal; and check and coordinate each submittal with requirements of work and contract documents.
- c. Review submittals for conformance with project design concepts and compliance with contract documents.
- d. Act on submittals, determining appropriate action based on QC organization's review of submittal.
  - (1) When QC manager is approving authority, take appropriate action on submittal from the possible actions defined in paragraph entitled, "Actions Possible."
  - (2) When contracting officer is approving authority or when variation has been proposed, forward submittal to Government with certifying statement or return submittal marked "not reviewed" or "revise and resubmit" as appropriate. The QC organization's review of submittal determines appropriate action.
- e. Ensure that material is clearly legible.
- f. Stamp each sheet of each submittal with QC certifying statement or

approving statement, except that data submitted in bound volume or on one sheet printed on two sides may be stamped on the front of the first sheet only.

(1) When approving authority is contracting officer, QC organization will certify submittals forwarded to contracting officer with the following certifying statement:

"I hereby certify that the (equipment) (material) (article) shown and marked in this submittal is that proposed to be incorporated with contract Number , is in compliance with the contract drawings and specification, can be installed in the allocated spaces, and is submitted for Government approval.

Certified by Submittal Reviewer \_\_\_\_\_, Date \_\_\_\_\_  
(Signature when applicable)

Certified by QC manager \_\_\_\_\_, Date \_\_\_\_\_"  
(Signature)

(2) When approving authority is QC manager, QC manager will use the following approval statement when returning submittals to contractor as "Approved" or "Approved as Noted."

"I hereby certify that the (material) (equipment) (article) shown and marked in this submittal and proposed to be incorporated with contract Number , is in compliance with the contract drawings and specification, can be installed in the allocated spaces, and is \_\_\_\_\_ approved for use.

Certified by Submittal Reviewer \_\_\_\_\_, Date \_\_\_\_\_  
(Signature when applicable)

Approved by QC manager \_\_\_\_\_, Date \_\_\_\_\_"  
(Signature)

- g. Sign certifying statement or approval statement. The person signing certifying statements shall be QC organization member designated in the approved QC plan. The signatures shall be in original ink. Stamped signatures are not acceptable.
- h. Update submittal register database as submittal actions occur and maintain the submittal register at project site until final acceptance of all work by contracting officer.
- i. Retain a copy of approved submittals at project site, including contractor's copy of approved samples.

#### 1.6.7 Government's Responsibilities

When approving authority is contracting Officer, the Government will:

- a. Note date on which submittal was received from QC manager, on each submittal for which the contracting officer is approving authority.

- b. Review submittals for approval within scheduling period specified and only for conformance with project design concepts and compliance with contract documents.
- c. Identify returned submittals with one of the actions defined in paragraph entitled "Actions Possible" and with markings appropriate for action indicated.

#### 1.6.8 Actions Possible

Submittals will be returned with one of the following notations:

- a. Submittals marked "not reviewed" will indicate submittal has been previously reviewed and approved, is not required, does not have evidence of being reviewed and approved by contractor, or is not complete. A submittal marked "not reviewed" will be returned with an explanation of the reason it is not reviewed. Resubmit submittals returned for lack of review by contractor or for being incomplete, with appropriate action, coordination, or change.
- b. Submittals marked "approved" "approved as submitted" authorize contractor to proceed with work covered.
- c. Submittals marked "approved as noted" or "approval except as noted; resubmission not required" authorize contractor to proceed with work as noted provided contractor takes no exception to the notations.
- d. Submittals marked "revise and resubmit" or "disapproved" indicate submittal is incomplete or does not comply with design concept or requirements of the contract documents and shall be resubmitted with appropriate changes. No work shall proceed for this item until resubmittal is approved.

#### 1.7 FORMAT OF SUBMITTALS

##### 1.7.1 Transmittal Form

Transmit each submittal, except sample installations and sample panels, to office of approving authority. Transmit submittals with transmittal form prescribed by contracting officer and standard for project. The transmittal form shall identify contractor, indicate date of submittal, and include information prescribed by transmittal form and required in paragraph entitled "Identifying Submittals." Process transmittal forms to record actions regarding sample panels and sample installations.

##### 1.7.2 Identifying Submittals

Identify submittals, except sample panel and sample installation, with the following information permanently adhered to or noted on each separate component of each submittal and noted on transmittal form. Mark each copy of each submittal identically, with the following:

- a. Project title and location.
- b. Construction contract number.
- c. Section number of the specification section by which submittal is required.
- d. Submittal description (SD) number of each component of submittal.
- e. When a resubmission, add alphabetic suffix on submittal description, for example, SD-10A, to indicate resubmission.
- f. Name, address, and telephone number of subcontractor, supplier, manufacturer and any other second tier contractor associated with submittal.
- g. Product identification and location in project.

#### 1.7.3 Format for Product Data

- a. Present product data submittals for each section as a complete, bound volume. Include table of contents, listing page and catalog item numbers for product data.
- b. Indicate, by prominent notation, each product which is being submitted; indicate specification section number and paragraph number to which it pertains.
- c. Supplement product data with material prepared for project to satisfy submittal requirements for which product data does not exist. Identify this material as developed specifically for project.

#### 1.7.4 Format for Shop Drawings

- a. Shop drawings shall not be less than 8 1/2 by 11 inches nor more than 30 by 42 inches.
- b. Present 8 1/2 by 11 inches sized shop drawings as part of the bound volume for submittals required by section. Present larger drawings in sets.
- c. Include on each drawing the drawing title, number, date, and revision numbers and dates, in addition to information required in paragraph entitled "Identifying Submittals."
- d. Dimension drawings, except diagrams and schematic drawings; prepare drawings demonstrating interface with other trades to scale. Shop drawing dimensions shall be the same unit of measure as indicated on the contract drawings. Identify materials and products for work shown.

#### 1.7.5 Format of Samples

- a. Furnish samples in sizes below, unless otherwise specified or unless the manufacturer has prepackaged samples of approximately same size as specified:
  - (1) Sample of Equipment or Device: Full size.
  - (2) Sample of Materials Less Than 2 by 3 inches: Built up to 8 1/2 by 11 inches.
  - (3) Sample of Materials Exceeding 8 1/2 by 11 inches: Cut down to 8 1/2 by 11 inches and adequate to indicate color, texture, and material variations.
  - (4) Sample of Linear Devices or Materials: 10 inch length or length to be supplied, if less than 10 inches. Examples of linear devices or materials are conduit and handrails.
  - (5) Sample of Non-Solid Materials: Pint. Examples of non-solid materials are sand and paint.
  - (6) Color Selection Samples: 2 by 4 inches.
  - (7) Sample Panel: 4 by 4 feet.
  - (8) Sample Installation: 100 square feet.
- b. Samples Showing Range of Variation: Where variations are unavoidable due to nature of the materials, submit sets of samples of not less than three units showing extremes and middle of range.
- c. Reusable Samples: Incorporate returned samples into work only if so specified or indicated. Incorporated samples shall be in undamaged condition at time of use.
- d. Recording of Sample Installation: Note and preserve the notation of area constituting sample installation but remove notation at final clean up of project.
- e. When color, texture or pattern is specified by naming a particular manufacturer and style, include one sample of that manufacturer and style, for comparison.

#### 1.7.6 Format of Administrative Submittals

- a. When submittal includes a document which is to be used in project or become part of project record, other than as a submittal, do not apply contractor's approval stamp to document, but to a separate sheet accompanying document.

### 1.8 QUANTITY OF SUBMITTALS

#### 1.8.1 Number of Copies of Product Data

- a. Submit six copies of submittals of product data requiring review

and approval only by QC organization and seven copies of product data requiring review and approval by contracting officer.

#### 1.8.2 Number of Copies of Shop Drawings

Submit shop drawings in compliance with quantity requirements specified for product data.

#### 1.8.3 Number of Samples

- a. Submit two samples, or two sets of samples showing range of variation, of each required item. One approved sample or set of samples will be retained by approving authority and one will be returned to contractor.
- b. Submit one sample panel. Include components listed in technical section or as directed.
- c. Submit one sample installation, where directed.
- d. Submit one sample of non-solid materials.

#### 1.8.4 Number of Copies of Administrative Submittals

- a. Unless otherwise specified, submit administrative submittals compliance with quantity requirements specified for product data.

### 1.9 FORWARDING SUBMITTALS

#### 1.9.1 Samples Required of the Contractor

Submit samples to Contracting Officer.

#### 1.9.2 Shop Drawings, Product Data, and O&M Data

As soon as practicable after award of contract, and before procurement of fabrication, submit, except as specified otherwise, to the Contracting Officer the shop drawings, product data and O&M Data required in the technical sections of this specification. The Architect-Engineer for this project will review and provide surveillance for the Contracting Officer to determine if Contractor-approved submittals comply with the contract requirements, and will review and approve for the Contracting Officer those submittals not permitted to be Contractor approved to determine if submittals comply with the contract requirements. One copy of the transmittal form for submittals shall be forwarded to the Resident Officer in Charge of Construction

### 1.10 SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

#### 1.10.1 Government Approved

Government approval is required for extensions of design, critical

materials, deviations, equipment whose compatibility with the entire system must be checked, and other items as designated by the Contracting Officer. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction," they are considered to be "shop drawings."

#### 1.10.2 Information Only

All submittals not requiring Government approval will be for information only. They are not considered to be "shop drawings" within the terms of the Contract Clause referred to above.

#### 1.11 APPROVED SUBMITTALS

The Contracting Officer's approval of submittals shall not be construed as a complete check, but will indicate only that the general method of construction, materials, detailing and other information are satisfactory. Approval will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor under the Contractor Quality Control (CQC) requirements of this contract is responsible for dimensions, the design of adequate connections and details, and the satisfactory construction of all work. After submittals have been approved by the Contracting Officer, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

#### 1.12 DISAPPROVED SUBMITTALS

The Contractor shall make all corrections required by the Contracting Officer and promptly furnish a corrected submittal in the form and number of copies specified for the initial submittal. If the Contractor considers any correction indicated on the submittals to constitute a change to the contract, a notice in accordance with the Contract Clause "Changes" shall be given promptly to the Contracting Officer.

#### 1.13 WITHHOLDING OF PAYMENT

Payment for materials incorporated in the work will not be made if required approvals have not been obtained.

#### 1.14 GENERAL

The Contractor shall make submittals as required by the specifications. The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Units of weights and measures used on all submittals shall be the same as those used in the contract drawings. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior to submittal, all items shall be checked and approved by the Contractor's Quality Control (CQC) System Manager and each item shall be stamped, signed, and dated by the CQC System Manager indicating action taken. Proposed deviations from the contract requirements shall be clearly identified. Submittals shall include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including



(but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals. Submittals requiring Government approval shall be scheduled and made prior to the acquisition of the material or equipment covered thereby. Samples remaining upon completion of the work shall be picked up and disposed of in accordance with manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

#### 1.15 SUBMITTAL REGISTER

At the end of this section is a submittal register showing items of equipment and materials for which submittals are required by the specifications; this list may not be all inclusive and additional submittals may be required. The Contractor shall maintain a submittal register for the project.

#### 1.16 SCHEDULING

Submittals covering component items forming a system or items that are interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. Adequate time (a minimum of 30 calendar days exclusive of mailing time) shall be allowed and shown on the register for review and approval. No delay damages or time extensions will be allowed for time lost in late submittals.

#### 1.17 TRANSMITTAL FORM (ENG FORM 4025)

The sample transmittal form (ENG Form 4025) attached to this section shall be used for submitting both Government approved and information only submittals in accordance with the instructions on the reverse side of the form. These forms are included in the RMS-QC software that the Contractor is required to use for this contract. This form shall be properly completed by filling out all the heading blank spaces and identifying each item submitted. Special care shall be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item.

#### 1.18 SUBMITTAL PROCEDURES

Submittals shall be made as follows:

##### 1.18.1 Procedures

The Contractor shall complete ENG Form 4025, "Transmittal of Shop Drawings, Equipment Data, Material Samples, or Manufacturer's Certificate of Compliance" with each set of shop drawings, certificates, equipment data of samples submitted. A blank ENG Form 4025 will be furnished by the Contracting Officer on request. Six (6) copies of each submittal will be required.

##### 1.18.2 Deviations

For submittals which include proposed deviations requested by the Contractor, the column "variation" of ENG Form 4025 shall be checked. The Contractor shall set forth in writing the reason for any deviations and annotate such deviations on the submittal. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

#### 1.19 CONTROL OF SUBMITTALS

The Contractor shall carefully control his procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register."

#### 1.20 GOVERNMENT APPROVED SUBMITTALS

Upon completion of review of submittals requiring Government approval, the submittals will be identified as having received approval by being so stamped and dated. Four copies of the submittal will be retained by the Contracting Officer and two copies of the submittal will be returned to the Contractor.

#### 1.21 INFORMATION ONLY SUBMITTALS

Normally submittals for information only will not be returned. Approval of the Contracting Officer is not required on information only submittals. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe.

#### 1.22 STAMPS

Stamps used by the Contractor on the submittal data to certify that the submittal meets contract requirements shall be similar to the following:

<p>CONTRACTOR</p> <p>(Firm Name)</p> <p>_____ Approved</p> <p>_____ Approved with corrections as noted on submittal data and/or attached sheets(s).</p> <p>SIGNATURE: _____</p> <p>TITLE: _____</p> <p>DATE: _____</p>
--

## PART 2 PRODUCTS

Not used.

## PART 3 EXECUTION

Not used.

-- End of Section --

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# SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION

MURRIETA CREEK PHASE 1

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION	PARAGRAPH	CLASSIFICATION / REVIEWER	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION		DATE FWD TO APPR AUTH/  DATE RCD FROM CONTR	APPROVING AUTHORITY				MAILED TO CONTR/  DATE RCD FRM APPR AUTH	REMARKS
						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION		DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		
(a)	(b)	(c)	ITEM SUBMITTED (d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		01200	SD-01 Preconstruction Submittals														
			Topographic Surveyor	3.18.2	G RE												
			Site Plan	1.3.1	G RE												
			Site-specific Safety and Health Plan	3.11.1	G RE												
			Activity Hazards Safety Analysis	3.11.2													
			Traffic Control Plan	3.9.6.2													
			Access and Haul Roads	3.10.2													
			Practicable Schedule	3.13	G RE												
			Annotated Schedule	3.13													
			Haul route plan	3.9.6.7	G RE												
			Encroachment Permit	3.12.5													
			SD-02 Shop Drawings														
			Pre-construction topographic survey of the entire project site, except optional disposal site	3.20													
			Pre-construction topographic survey of the optional disposal site	3.17.7.1													
			Post-construction topographic survey of the entire project site, except optional disposal site	3.20													
			Post-construction topographic survey of the optional disposal site	3.17.7.1													
		01330	SD-01 Preconstruction Submittals														
			Submittal Register	1.5.1													
		01355	SD-01 Preconstruction Submittals														

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TITLE AND LOCATION  
MURRIETA CREEK PHASE 1

CONTRACTOR

A C T I V I T Y  N O	T R A N S M I T T A L  N O	S P E C  S E C T	DESCRIPTION	P A R A G R A P H	G O V T  C L A S S I F I C A T I O N /	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION		DATE FWD TO APPR AUTH/  DATE RCD FROM CONTR	APPROVING AUTHORITY				MAILED TO CONTR/  DATE RCD FRM APPR	REMARKS
							APPROVAL NEEDED	MATERIAL NEEDED	A C T I O N  C O D E	DATE OF ACTION		DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	A C T I O N  C O D E	DATE OF ACTION		
(a)	(b)	(c)	ITEM SUBMITTED (d)	(e)	(f)	SUBMIT (g)	BY (h)	BY (i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		01355	Environmental Protection Plan	1.7	G RE												
			Species that require specific attention	3.9.2													
			SD-07 Certificates														
			Mill Certificate or Affidavit	2.1.3													
		01451	SD-01 Preconstruction Submittals														
			Quality Control Plan	3.2	G RE												
		01702	SD-11 Closeout Submittals														
			As-built Drawings	3.1.1													
		02100	SD-01 Preconstruction Submittals														
			Control of Water Plan	1.1.1	G RE												
		02300	SD-01 Preconstruction Submittals														
			Excavation plan	3.3													
			Haul route plan		G												
			SD-02 Shop Drawings														
			Explosive Storage Location	3.6.8.2	G												
			SD-05 Design Data														
			Blast Data Report	3.6.2													
			Blast Data Report	3.6.7													
			SD-06 Test Reports														
			Testing	3.12													
			SD-07 Certificates														
			Testing	3.12													
		02316	SD-06 Test Reports														
			Field Density Tests	3.3.3													
			Testing of Backfill Materials	3.3.2													

# SUBMITTAL REGISTER

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TITLE AND LOCATION  
MURRIETA CREEK PHASE 1

CONTRACTOR

A C T I V I T Y  N O	T R A N S M I T T A L  N O	S P E C  S E C T		P A R A G R A P H	C L A S S I F I C A T I O N	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY				MAILED TO CONTR/  DATE RCD FRM APPR		
									A C T I O N  C O D E			DATE FWD TO APPR AUTH/  DATE RCD FROM CONTR			A C T I O N  C O D E			
(a)	(b)	(c)	DESCRIPTION  (d)	(e)	(f)	SUBMIT  (g)	APPROVAL NEEDED  (h)	MATERIAL NEEDED  (i)	(j)	DATE OF ACTION  (k)	(l)	(m)	(n)	(o)	(p)	(q)	REMARKS  (r)	
		02378	SD-04 Samples															
			Geotextile Sample	2.1.1.1														
			SD-07 Certificates															
			Geotextile Material	2.1.1														
		02551	SD-03 Product Data															
			Waybills and Delivery Tickets	3.12														
			SD-05 Design Data															
			Bituminous Pavement Mix Design	2.2.1														
		02558	SD-06 Test Reports															
			Testing	3.6														
			SD-07 Certificates															
			Waybills and Delivery Tickets	3.6.5														
		02600	SD-03 Product Data															
			Stone Sources	2.1.3	G													
			SD-05 Design Data															
			Method of placement	3.2.1	G													
			SD-06 Test Reports															
			Stone Quality Testing	2.1.4.2														
			Gradation Sampling and Testing	2.1.5.2														
			SD-07 Certificates															
			Waybills and Delivery Tickets	3.3.2														
		02650	SD-05 Design Data															
			Grout Mix Design	3.1														
			SD-06 Test Reports															
			Aggregates	2.1														
			SD-07 Certificates															

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						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION		DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		02650	Portland Cement	2.2													
			Curing Materials	2.4													
			Waybills and Delivery Tickets	3.6													
		02722	SD-03 Product Data														
			Plant, Equipment, and Tools	1.6													
			Waybills and Delivery Tickets	3.3													
			SD-06 Test Reports														
			Sampling and testing	1.4													
			Field Density Tests	1.4.2.4													
		02723	SD-06 Test Reports														
			SAMPLING AND TESTING	2.2													
			Sample	2.2.2													
		02811	SD-02 Shop Drawings														
			Sprinkler System	3.1	G RE												
			SD-03 Product Data														
			Framed Instructions	3.3													
			Field Training	1.3.1													
			Sprinkler System	3.1													
			SD-06 Test Reports														
			Field Tests	3.2													
			SD-07 Certificates														
			Sprinkler System	3.1													
			SD-10 Operation and Maintenance														
			Data														
			Sprinkler System	3.1													
		02921	SD-03 Product Data														



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									ACTION CODE	DATE OF ACTION		DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE			DATE OF ACTION
											ITEM SUBMITTED					(d)		
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	
		02921	Equipment	3.3.1.1														
			Delivery	1.4.1														
			Topsoil	2.2														
			Quantity Check	3.4														
			Seed Establishment Period	3.10														
			Maintenance Record	3.10.7														
			Maintenance Plan	3.3.3	G RE													
			Application of Pesticide	3.5														
			Wood cellulose fiber mulch and tackifier	3.3.2														
			SD-04 Samples															
			Delivered Topsoil	1.4.1.1														
			Soil Amendments	2.3														
			Mulch	3.10.6														
			Erosion Control Material	2.6														
			SD-06 Test Reports															
			Equipment Calibration	3.1.3														
			Soil Test	3.1.4														
			SD-07 Certificates															
			Seed	2.1														
			Topsoil	2.2														
			pH Adjuster	2.3.1														
			Fertilizer	2.3.2														
			Soil Conditioner	2.3														
			Mulch	3.10.6														
			Pesticide	2.5														

# SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION

MURRIETA CREEK PHASE 1

CONTRACTOR

A C T I V I T Y  N O	T R A N S M I T T A L  N O	S P E C  S E C T	DESCRIPTION	P A R A G R A P H	G O V T  C L A S S I F I C A T I O N R	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION		DATE FWD TO APPR AUTH/  DATE RCD FROM CONTR	APPROVING AUTHORITY				MAILED TO CONTR/  DATE RCD FRM APPR	REMARKS
						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	A C T I O N  C O D E	DATE OF ACTION		DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	A C T I O N  C O D E	DATE OF ACTION		
(a)	(b)	(c)	ITEM SUBMITTED (d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		02930	SD-03 Product Data														
			Erosion Control Material	2.4													
			Delivery	1.4.1													
			Plant Establishment Period	3.9													
			Maintenance Record	3.9.2.6													
			Application of Pesticide	3.7													
			SD-06 Test Reports														
			Soil Test	3.1.3.2													
			SD-07 Certificates														
			Plant Material	2.1													
			Topsoil	2.2													
			pH Adjuster	2.3.1													
			Fertilizer	2.3.2													
			Organic Material	2.3													
			Soil Conditioner	2.3													
			Mycorrhizal Fungi Inoculum	2.6													
			Pesticide	2.9													
			SD-10 Operation and Maintenance Data														
			Maintenance Instructions	3.9.5													
		03307	SD-01 Preconstruction Submittals														
			Batching and Mixing Equipment	3.1.4.3													
			Conveying and Placing Concrete	3.2													
			SD-03 Product Data														
			Air-Entraining Admixture	2.1.3.1													
			Accelerating Admixture	2.1.3.2													

CONTRACT NO.

CONTRACTOR

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TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE <i>(Read instructions on the reverse side prior to initiating this form)</i>	DATE	TRANSMITTAL NO.
---	------	-----------------

**SECTION I - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS** *(This section will be initiated by the contractor)*

TO:	FROM:	CONTRACT NO.	CHECK ONE: <input type="checkbox"/> THIS IS A NEW TRANSMITTAL <input type="checkbox"/> THIS IS A RESUBMITTAL OF TRANSMITTAL _____
-----	-------	--------------	---

SPECIFICATION SEC. NO. <i>(Cover only one section with each transmittal)</i>	PROJECT TITLE AND LOCATION	CHECK ONE: THIS TRANSMITTAL IS FOR <input type="checkbox"/> FIO <input type="checkbox"/> GOV'T. APPROVAL
--	----------------------------	--

ITEM NO.  a.	DESCRIPTION OF ITEM SUBMITTED <i>(Type size, model number/etc.)</i>	MFG OR CONTR. CAT., CURVE DRAWING OR BROCHURE NO. <i>(See instruction no. 8)</i> c.	NO. OF COPIES  d.	CONTRACT REFERENCE DOCUMENT		FOR CONTRACTOR USE CODE  g.	VARIATION <i>(See instruction No. 6)</i> h.	FOR CE USE CODE  i.
				SPEC. PARA. NO. e.	DRAWING SHEET NO. f.			

REMARKS	I certify that the above submitted items have been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as other wise stated.  _____ NAME AND SIGNATURE OF CONTRACTOR
---------	---

**SECTION II - APPROVAL ACTION**

ENCLOSURES RETURNED <i>(List by Item No.)</i>	NAME, TITLE AND SIGNATURE OF APPROVING AUTHORITY	DATE
---	--	------

## INSTRUCTIONS

1. Section I will be initiated by the Contractor in the required number of copies.
2. Each transmittal shall be numbered consecutively in the space provided for "Transmittal No.". This number, in addition to the contract number, will form a serial number for identifying each submittal. For new submittals or resubmittals mark the appropriate box; on resubmittals, insert transmittal number of last submission as well as the new submittal number.
3. The "Item No." will be the same "Item No." as indicated on ENG FORM 4288-R for each entry on this form.
4. Submittals requiring expeditious handling will be submitted on a separate form.
5. Separate transmittal form will be used for submittals under separate sections of the specifications.
6. A check shall be placed in the "Variation" column when a submittal is not in accordance with the plans and specifications--also, a written statement to that effect shall be included in the space provided for "Remarks".
7. Form is self-transmittal, letter of transmittal is not required.
8. When a sample of material or Manufacturer's Certificate of Compliance is transmitted, indicate "Sample" or "Certificate" in column c, Section I.
9. U.S. Army Corps of Engineers approving authority will assign action codes as indicated below in space provided in Section I, column i to each item submitted. In addition they will ensure enclosures are indicated and attached to the form prior to return to the contractor. The Contractor will assign action codes as indicated below in Section I, column g, to each item submitted.

### THE FOLLOWING ACTION CODES ARE GIVEN TO ITEMS SUBMITTED

- |   |   |
|---|---|
| A -- Approved as submitted.   | E -- Disapproved (See attached).  |
| B -- Approved, except as noted on drawings.   | F -- Receipt acknowledged.  |
| C -- Approved, except as noted on drawings.<br>Refer to attached sheet resubmission required. | FX -- Receipt acknowledged, does not comply<br>as noted with contract requirements. |
| D -- Will be returned by separate correspondence.   | G -- Other (Specify)  |

10. Approval of items does not relieve the contractor from complying with all the requirements of the contract plans and specifications.

(Reverse of ENG Form 4025-R)

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## DIVISION 01 - GENERAL REQUIREMENTS

## SECTION 01355

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  - 1.2.2 Environmental Protection
    - 1.2.2.1 ENVIRONMENTAL PROTECTION REQUIREMENTS
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  - 1.2.4 Land Application for Discharge Water
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  - 1.2.6 Waters of the United States
  - 1.2.7 Wetlands
- 1.3 GENERAL REQUIREMENTS
- 1.4 SUBCONTRACTORS
- 1.5 PAYMENT
- 1.6 SUBMITTALS
- 1.7 Environmental Protection Plan
  - 1.7.1 Compliance
  - 1.7.2 Contents
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- 1.8 Protection of Features
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- 1.11 EROSION AND SEDIMENT CONTROLS
  - 1.11.1 Stabilization Practices
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    - 1.11.1.2 No Activity for Less Than 21 Days
  - 1.11.2 Structural Practices
    - 1.11.2.1 Silt Fences
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    - 1.11.2.3 Diversion Dikes

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## SECTION 01355

## ENVIRONMENTAL PROTECTION

## PART 1 GENERAL

Contractor shall coordinate all environmental concerns to the Contracting Officer.

## 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

## ASTM INTERNATIONAL (ASTM)

ASTM D 4439	(2001) Geosynthetics
ASTM D 4491	(1999a) Water Permeability of Geotextiles by Permittivity
ASTM D 4533	(1991; R 1996) Trapezoid Tearing Strength of Geotextiles
ASTM D 4632	(1991; R 1996) Grab Breaking Load and Elongation of Geotextiles
ASTM D 4751	(1999a) Determining Apparent Opening Size of a Geotextile
ASTM D 4873	(2001) Identification, Storage, and Handling of Geosynthetic Rolls and Samples

## U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

33 CFR 328	Definitions of Waters of the United States
40 CFR 68	Chemical Accident Prevention Provisions
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 279	Standards for the Management of Used Oil
40 CFR 302	Designation, Reportable Quantities, and Notification
40 CFR 355	Emergency Planning and Notification
49 CFR 171 - 178	Hazardous Materials Regulations

## U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1

(1996) U.S. Army Corps of Engineers Safety  
and Health Requirements Manual

WETLAND MANUAL

Corps of Engineers Wetlands Delineation  
Manual Technical Report Y-87-1

## 1.2 DEFINITIONS

## 1.2.1 Environmental Pollution and Damage

For the purpose of this specification, environmental pollution and damage is defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to man; or degrade the utility of the environment for but not limited to aesthetic, cultural and/or historical purposes.

## 1.2.2 Environmental Protection

Environmental protection is the prevention/control of pollution and habitat disruption that may occur to the environment during construction. The control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

## 1.2.2.1 ENVIRONMENTAL PROTECTION REQUIREMENTS

These requirements are to provide and maintain, during the life of the contract, environmental protection. Plan for and provide environmental protective measures to control pollution that develops during normal construction practice. Plan for and provide environmental protective measures required to correct conditions that develop during the construction of permanent or temporary environmental features associated with the project; and comply with Federal, State, and local regulations pertaining to the environment, including but not limited to water, air, and noise pollution; biological resources, transportation, recreation, public services and utilities; geology, seismicity and soils; hazardous materials and waste management. The Contractor will comply with all the requirements of the Environmental Protection Plan as described in this section. This plan will be applicable prior to and during the construction of Phase 1 of the Murrieta Creek Flood Control and Environmental Restoration Project.

## 1.2.3 Contractor Generated Hazardous Waste

Contractor generated hazardous waste means materials that, if abandoned or disposed of, may meet the definition of a hazardous waste. These waste streams would typically consist of material brought on site by the Contractor to execute work, but are not fully consumed during the course of construction. Examples include, but are not limited to, excess paint

thinners (i.e. methyl ethyl ketone, toluene etc.), waste thinners, excess paints, excess solvents, waste solvents, and excess pesticides, and contaminated pesticide equipment rinse water.

#### 1.2.4 Land Application for Discharge Water

The term "Land Application" for discharge water implies that the Contractor shall discharge water at a rate which allows the water to percolate into the soil. No sheeting action, soil erosion, discharge into storm sewers, discharge into defined drainage areas, or discharge into the "waters of the United States" shall occur. Land Application shall be in compliance with all applicable Federal, State, and local laws and regulations.

#### 1.2.5 Surface Discharge

The term "Surface Discharge" implies that the water is discharged with possible sheeting action and subsequent soil erosion may occur. Waters that are surface discharged may terminate in drainage ditches, storm sewers, creeks, and/or "waters of the United States" and would require a permit to discharge water from the governing agency.

#### 1.2.6 Waters of the United States

All waters which are under the jurisdiction of the Clean Water Act, as defined in 33 CFR 328.

#### 1.2.7 Wetlands

Wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, and bogs. Official determination of whether or not an area is classified as a wetland must be done in accordance with WETLAND MANUAL.

### 1.3 GENERAL REQUIREMENTS

The Contractor shall minimize environmental pollution and damage that may occur as the result of construction operations. The environmental resources within the project boundaries and those affected outside the limits of permanent work shall be protected during the entire duration of this contract. The Contractor shall comply with all applicable environmental Federal, State, and local laws and regulations. The Contractor shall be responsible for any delays resulting from failure to comply with environmental laws and regulations.

### 1.4 SUBCONTRACTORS

The Contractor shall ensure compliance with this section by subcontractors. Assurance of compliance with this section by subcontractors will be the responsibility of the Contractor and subject to disciplinary action and/or shut down until compliance is met.

## 1.5 PAYMENT

No separate payment will be made for work covered under this section. The Contractor shall be responsible for payment of fees associated with environmental permits, application, and/or notices obtained by the Contractor. All costs associated with this section shall be included in the contract price. The Contractor shall be responsible for payment of all fines/fees for violation or non-compliance with Federal, State, Regional and local laws and regulations.

## 1.6 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The "RE" designates that the Resident Office will review the submittal for the Government. Submit the following in accordance with Section 01330, SUBMITTAL PROCEDURES:

### SD-01 Preconstruction Submittals

Environmental Protection Plan; G, RE.

The environmental protection plan.

Species that require specific attention.

Species that require specific attention along with measures for their protection will be listed for all workers by the Contractor prior to beginning of construction operations.

### SD-07 Certificates

Mill Certificate or Affidavit.

Certificate attesting that the Contractor has met all specified requirements.

## 1.7 Environmental Protection Plan

Prior to commencing construction activities or delivery of materials to the site, the Contractor shall submit an Environmental Protection Plan covering all mitigation measures contained herein for the protection of the environment as identified and discussed further in this section for review and approval by the Contracting Officer. Prior to submittal of the Environmental Protection Plan, the Contractor shall meet with the Contracting Officer for the purpose of discussing the implementation of the initial Environmental Protection Plan; possible subsequent additions and revisions to the plan including any reporting requirements; and methods for administration of the Contractor's Environmental Plans. The Contractor will meet with representatives of the Contracting Officer to develop a mutual understanding relative to compliance with this provision and administration of the environmental protection program. Construction and/or associated activities thereof will not commence until the

environmental protection plan is approved by the Government. Approval of the Contractor's plan will not relieve the Contractor of his responsibility for adequate and continuous control of pollutants and other environmental protection measures. The purpose of the Environmental Protection Plan is to present a comprehensive overview of known or potential environmental issues which the Contractor must address during construction. Issues of concern shall be defined within the Environmental Protection Plan as outlined in this section. The Contractor shall address each topic at a level of detail commensurate with the environmental issue and required construction task(s). Topics or issues which are not identified in this section, but which the Contractor considers necessary, shall be identified and discussed after those items formally identified in this section. The Environmental Protection Plan shall be current and maintained onsite by the Contractor. The Government reserves the right to make changes in the Contractor's environmental protection plan and operations as necessary to maintain satisfactory environmental protection performance. The Government reserves the right to halt construction operations at the expense of the Contractor should the Contractor be found in non-compliance with the environmental protection plan approved by the Contracting Officer. Construction operations would resume when compliance is met. The environmental protection plan will include but not be limited to the following:

#### 1.7.1 Compliance

No requirement in this Section shall be construed as relieving the Contractor of any applicable Federal, State, and local environmental protection laws and regulations. During Construction, the Contractor shall be responsible for identifying, implementing, and submitting for approval any additional requirements to be included in the Environmental Protection Plan.

#### 1.7.2 Contents

The environmental protection plan shall include, but shall not be limited to, the following:

- a. Name(s) of person(s) within the Contractor's organization who is(are) responsible for ensuring adherence to the Environmental Protection Plan.
- b. Name(s) and qualifications of person(s) responsible for manifesting hazardous waste to be removed from the site, if applicable.
- c. Name(s) and qualifications of person(s) responsible for training the Contractor's environmental protection personnel.
- d. Description of the Contractor's environmental protection personnel training program.
- e. An erosion and sediment control plan which identifies the type and location of the erosion and sediment controls to be provided. The plan shall include monitoring and reporting requirements to assure

that the control measures are in compliance with the erosion and sediment control plan, Federal, State, and local laws and regulations. The Contractor's Storm Water Pollution Prevention Plan (SWPPP) may be substituted for the erosion and sediment control plan.

- f. Drawings showing locations of proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials including methods to control runoff and to contain materials on the site.
- g. Traffic control plans including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather. Plan shall include measures to minimize the amount of mud transported onto paved public roads by vehicles or runoff.
- h. Work area plan showing the proposed activity in each portion of the area and identifying the areas of limited use or nonuse. Plan should include measures for marking the limits of use areas including methods for protection of features to be preserved within authorized work areas.
- i. Drawing showing the location of borrow areas.
- j. The Spill Control plan shall include the procedures, instructions, and reports to be used in the event of an unforeseen spill of a substance regulated by 40 CFR 68, 40 CFR 302, 40 CFR 355, and/or regulated under State or Local laws and regulations. The Spill Control Plan supplements the requirements of EM 385-1-1. This plan shall include as a minimum:
  - 1. The name of the individual who will report any spills or hazardous substance releases and who will follow up with complete documentation. This individual shall immediately notify the Contracting Officer and the local Fire Department in addition to the legally required Federal, State, and local reporting channels (including the National Response Center 1-800-424-8802) if a reportable quantity is released to the environment. The plan shall contain a list of the required reporting channels and telephone numbers.
  - 2. The name and qualifications of the individual who will be responsible for implementing and supervising the containment and cleanup.
  - 3. Training requirements for Contractor's personnel and methods of accomplishing the training.
  - 4. A list of materials and equipment to be immediately available at the job site, tailored to cleanup work of the potential hazard(s) identified.
  - 5. The names and locations of suppliers of containment materials

and locations of additional fuel oil recovery, cleanup, restoration, and material-placement equipment available in case of an unforeseen spill emergency.

6. The methods and procedures to be used for expeditious contaminant cleanup.
- k. A non-hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris. The plan shall include schedules for disposal. The Contractor shall identify any subcontractors responsible for the transportation and disposal of solid waste. Licenses or permits shall be submitted for solid waste disposal sites that are not a commercial operating facility. Evidence of the disposal facility's acceptance of the solid waste shall be attached to this plan during the construction. The Contractor shall attach a copy of each of the Non-hazardous Solid Waste Diversion Reports to the disposal plan. The report shall be submitted on the first working day after the first quarter that non-hazardous solid waste has been disposed and/or diverted and shall be for the previous quarter (e.g. the first working day of January, April, July, and October). The report shall indicate the total amount of waste generated and total amount of waste diverted in cubic yards or tons along with the percent that was diverted. The Contractor shall monitor construction activities to prevent pollution of surface and ground waters. Toxic or hazardous chemicals shall not be applied to soil or vegetation unless otherwise indicated. All water areas affected by construction activities shall be monitored by the Contractor in addition to periodic monitoring by the U.S. Army Corps of Engineers Los Angeles District. For construction activities immediately adjacent to impaired surface waters, the Contractor shall be capable of quantifying sediment or pollutant loading to that surface water when required by State or Federally-issued Clean Water Act permits.
- l. A recycling and solid waste minimization plan with a list of measures to reduce consumption of energy and natural resources. The plan shall detail the Contractor's actions to comply with and to participate in Federal, State, Regional, and local government sponsored recycling programs to reduce the volume of solid waste at the source.
- m. An air pollution control plan detailing provisions to assure that dust, debris, materials, trash, etc., do not become air borne and travel off the project site.
- n. A contaminant prevention plan that: identifies potentially hazardous substances to be used on the job site; identifies the intended actions to prevent introduction of such materials into the air, water, or ground; and details provisions for compliance with Federal, State, and local laws and regulations for storage and handling of these materials. In accordance with EM 385-1-1, a copy of the Material Safety Data Sheets (MSDS) and the maximum quantity of each hazardous material to be on site at any given



time shall be included in the contaminant prevention plan. As new hazardous materials are brought on site or removed from the site, the plan shall be updated.

- o. A waste water management plan that identifies the methods and procedures for management and/or discharge of waste waters which are directly derived from construction activities, such as concrete curing water, clean-up water, dewatering of ground water, disinfection water, hydrostatic test water, and water used in flushing of lines. Waste waters directly derived from construction activities will not be allowed to enter water areas. These waste waters will be collected and placed in retention ponds where the suspended materials can be settled out or the water evaporated in order to separate the pollutants from the water. If a settling/retention pond is required, the plan shall include the design of the pond including drawings, removal plan, and testing requirements for possible pollutants. If land application will be the method of disposal for the waste water, the plan shall include a sketch showing the location for land application along with a description of the pretreatment methods to be implemented. If surface discharge will be the method of disposal, a copy of the permit and associated documents shall be included as an attachment prior to discharging the waste water. If disposal is to a sanitary sewer, the plan shall include documentation that the Waste Water Treatment Plant Operator has approved the flow rate, volume, and type of discharge.
- p. A historical, archaeological, cultural resources biological resources and wetlands plan that defines procedures for identifying and protecting historical, archaeological, cultural resources, biological resources and wetlands known to be on the project site: and/or identifies procedures to be followed if historical archaeological, cultural resources, biological resources and wetlands not previously known to be onsite or in the area are discovered during construction. The plan shall include methods to assure the protection of known or discovered resources and shall identify lines of communication between Contractor personnel and the Contracting Officer.

#### 1.7.3 Appendix

Copies of all environmental permits, permit application packages, approvals to construct, notifications, certifications, reports, and termination documents shall be attached, as an appendix, to the Environmental Protection Plan.

#### 1.8 Protection of Features

This paragraph supplements the Contract Clause PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS. Prior to start of any onsite construction activities, the Contractor and the Contracting Officer shall make a joint condition survey. Immediately following the survey, the Contractor shall prepare a brief report including a plan describing the features requiring protection under the provisions of

the Contract Clauses, which are not specifically identified on the drawings as environmental features requiring protection along with the condition of trees, shrubs and grassed areas immediately adjacent to the site of work and adjacent to the Contractor's assigned storage area and access route(s), as applicable. This survey report shall be signed by both the Contractor and the Contracting Officer upon mutual agreement as to its accuracy and completeness. The Contractor shall protect those environmental features included in the survey report and any indicated on the drawings, regardless of interference which their preservation may cause to the Contractor's work under the contract.

#### 1.9 ENVIRONMENTAL ASSESSMENT OF CONTRACT DEVIATIONS

Any deviations, requested by the Contractor, from the drawings, plans and specifications which may have an environmental impact will be subject to approval by the Contracting Officer and may require an extended review, processing, and approval time. The Contracting Officer reserves the right to disapprove alternate methods, even if they are more cost effective, if the Contracting Officer determines that the proposed alternate method will have an adverse environmental impact.

#### 1.10 NOTIFICATION

The Contracting Officer will notify the Contractor in writing of any observed noncompliance with Federal, State or local environmental laws or regulations, permits, and other elements of the Contractor's Environmental Protection plan. The Contractor shall, after receipt of such notice, inform the Contracting Officer of the proposed corrective action and take such action when approved by the Contracting Officer. The Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions shall be granted or equitable adjustments allowed to the Contractor for any such suspensions. This is in addition to any other actions the Contracting Officer may take under the contract, or in accordance with the Federal Acquisition Regulation or Federal Law.

#### 1.11 EROSION AND SEDIMENT CONTROLS

The controls and measures required by the Contractor are described below.

##### 1.11.1 Stabilization Practices

The stabilization practices to be implemented shall include silt fences, straw bales, soil stabilizer, geotextiles, erosion control mats, etc. On his daily CQC Report, the Contractor shall record the dates when the major grading activities occur, (e.g., clearing and grubbing, excavation, embankment, and grading); when construction activities temporarily or permanently cease on a portion of the site; and when stabilization practices are initiated. Except as provided in paragraphs UNSUITABLE CONDITIONS and NO ACTIVITY FOR LESS THAN 21 DAYS, stabilization practices shall be initiated as soon as practicable, but no more than 14 days, in any portion of the site where construction activities have temporarily or permanently ceased.

#### 1.11.1.1 Unsuitable Conditions

Where the initiation of stabilization measures by the fourteenth day after construction activity temporarily or permanently ceases is precluded by unsuitable conditions caused by the weather, stabilization practices shall be initiated as soon as practicable after conditions become suitable.

#### 1.11.1.2 No Activity for Less Than 21 Days

Where construction activity will resume on a portion of the site within 21 days from when activities ceased (e.g., the total time period that construction activity is temporarily ceased is less than 21 days), then stabilization practices do not have to be initiated on that portion of the site by the fourteenth day after construction activity temporarily ceased.

#### 1.11.2 Structural Practices

Structural practices shall be implemented to divert flows from exposed soils, temporarily store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Structural practices shall be implemented in a timely manner during the construction process to minimize erosion and sediment runoff. Structural practices shall include the following devices as necessary.

##### 1.11.2.1 Silt Fences

The Contractor shall provide silt fences as a temporary structural practice to minimize erosion and sediment runoff. Silt fences shall be properly installed to effectively retain sediment immediately after completing each phase of work where erosion would occur in the form of sheet and rill erosion (e.g. clearing and grubbing, excavation, embankment, and grading). Silt fences shall be installed in the locations indicated on the drawings. Final removal of silt fence barriers shall be upon approval by the Contracting Officer.

##### 1.11.2.2 Straw Bales

The Contractor shall provide bales of straw as a temporary structural practice to minimize erosion and sediment runoff. Bales shall be properly placed to effectively retain sediment immediately after completing each phase of work (e.g., clearing and grubbing, excavation, embankment, and grading) in each independent runoff area (e.g., after clearing and grubbing in a area between a ridge and drain, bales shall be placed as work progresses, bales shall be removed/replaced/relocated as needed for work to progress in the drainage area). Areas where straw bales are to be used shall be shown in the SWPPP. Final removal of straw bale barriers shall be upon approval by the Contracting Officer. Rows of bales of straw shall be provided as follows:

- a. Along the downhill perimeter edge of all areas disturbed.
- b. Along the top of the slope or top bank of drainage ditches, channels, swales, etc. that traverse disturbed areas.

- c. Along the toe of all cut slopes and fill slopes of the construction areas.
- d. Perpendicular to the flow in the bottom of existing drainage ditches, channels, swales, etc. that traverse disturbed areas or carry runoff from disturbed areas. Rows shall be spaced as shown in the SWPPP.
- e. Perpendicular to the flow in the bottom of new drainage ditches, channels, and swales. Rows shall be spaced as shown in the SWPPP.
- f. At the entrance to culverts that receive runoff from disturbed areas.

#### 1.11.2.3 Diversion Dikes

Diversion dikes shall have a maximum channel slope of 2 percent and shall be adequately compacted to prevent failure. The minimum height measured from the top of the dike to the bottom of the channel shall be 20 inches. The minimum base width shall be 6 feet and the minimum top width shall be 2 feet. The Contractor shall ensure that the diversion dikes are not damaged by construction operations or traffic. Diversion dikes shall be located as shown in the SWPPP.

## PART 2 PRODUCTS

### 2.1 COMPONENTS FOR SILT FENCES

#### 2.1.1 Filter Fabric

The geotextile shall comply with the requirements of ASTM D 4439, and shall consist of polymeric filaments which are formed into a stable network such that filaments retain their relative positions. The filament shall consist of a long-chain synthetic polymer composed of at least 85 percent by weight of ester, propylene, or amide, and shall contain stabilizers and/or inhibitors added to the base plastic to make the filaments resistance to deterioration due to ultraviolet and heat exposure. Synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six months of expected usable construction life at a temperature range of 0 to 120 degrees F. The filter fabric shall meet the following requirements:

#### FILTER FABRIC FOR SILT SCREEN FENCE

PHYSICAL PROPERTY	TEST PROCEDURE	STRENGTH REQUIREMENT
Grab Tensile	ASTM D 4632	100 lbs. min.
Elongation (%)		30 % max.
Trapezoid Tear	ASTM D 4533	55 lbs. min.
Permittivity	ASTM D 4491	0.2 sec-1
AOS (U.S. Std Sieve)	ASTM D 4751	20-100

### 2.1.2 Silt Fence Stakes and Posts

The Contractor may use either wooden stakes or steel posts for fence construction. Wooden stakes utilized for silt fence construction, shall have a minimum cross section of 2 inches by 2 inches when oak is used and 4 inches by 4 inches when pine is used, and shall have a minimum length of 5 feet. Steel posts (standard "U" or "T" section) utilized for silt fence construction, shall have a minimum weight of 1.33 pounds per linear foot and a minimum length of 5 feet.

### 2.1.3 Mill Certificate or Affidavit

A mill certificate or affidavit shall be provided attesting that the fabric and factory seams meet chemical, physical, and manufacturing requirements specified above. The mill certificate or affidavit shall specify the actual Minimum Average Roll Values and shall identify the fabric supplied by roll identification numbers. The Contractor shall submit a mill certificate or affidavit signed by a legally authorized official from the company manufacturing the filter fabric.

### 2.1.4 Identification Storage and Handling

Filter fabric shall be identified, stored and handled in accordance with ASTM D 4873.

## 2.2 COMPONENTS FOR STRAW BALES

The straw in the bales shall be stalks from oats, wheat, rye, barley, rice, or from grasses such as byhalia, bermuda, etc., furnished in air dry condition. The bales shall have a standard cross section of 14 inches by 18 inches. All bales shall be either wire-bound or string-tied. The Contractor may use either wooden stakes or steel posts to secure the straw bales to the ground. Wooden stakes utilized for this purpose, shall have a minimum dimensions of 2 inches x 2 inches in cross section and shall have a minimum length of 3 feet. Steel posts (standard "U" or "T" section) utilized for securing straw bales, shall have a minimum weight of 1.33 pounds per linear foot and a minimum length of 3 feet.

## PART 3 EXECUTION

### 3.1 ENVIRONMENTAL PERMITS AND COMMITMENTS

This paragraph supplements the Contractor's responsibility under the contract clause "PERMITS AND RESPONSIBILITIES" to the extent that the Government has obtained environmental permits. The Contractor shall comply with the terms and conditions of the attached list of environmental commitments at the end of this section.

The Contractor shall be responsible for obtaining and complying with all environmental permits and commitments required by Federal, State, Regional, and local environmental laws and regulations.

#### 3.1.1 NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES), SWPPP AND NOI

A) In accordance with the United States National Pollution Discharge Elimination System (NPDES) Program / Statewide General Permit, the Contractor shall prepare a Storm Water Pollution Prevention Plan (SWPPP) in accordance with this Section and at least four weeks prior to the start of construction activities consisting of soil disturbing activities, the Contractor shall file a Notice of Intent with the site/vicinity map and appropriate fee to obtain coverage under the Statewide General Permit. The completed NOI form, site/vicinity map and appropriate fee must be mailed to the State Water Resources Control Board (SWRCB) at the following address:

State Water Resources Control Board  
Division of Water Quality  
ATTN: Storm Water Permit Unit  
P.O. Box 1977  
Sacramento, California 95812-1977  
ph (916) 341-5536/5537  
fax (916) 341-5543  
internet address: <http://www.swrcb.ca.gov/>

Overnight Mailing Address:

State Water Resources Control Board  
Division of Water Quality  
ATTN: Storm Water, 15th Floor  
1001 I Street  
Sacramento, California 95814

B) The NPDES / General Permit requires that a Storm Water Pollution Prevention Plan (SWPPP) shall be prepared and maintained on-site throughout the construction period. The processing of the NOI for the NPDES permit will require a minimum of 30 days. Construction work consisting of soil disturbing activities shall not begin without the SWRCB's receipt notification of the NOI.

C) Copies of the NOI forms, the site/vicinity map, and the SWRCB's receipt notification shall be provided to the U.S. Army Corps of Engineers Resident Office and the Environmental Resources Branch Ecosystems Planning Section, and the Contractor shall maintain a copy at the jobsite throughout the contract duration.

3.1.1.1 Storm Water Pollution Prevention Plan (SWPPP)

The Contractor shall prepare a Storm Water Pollution Prevention Plan (SWPPP), including Best Management Practices (BMPs) and a detailed sediment erosion control, in accordance with this Section and provide a copy of the SWPPP, and any modifications to the SWPPP, to the State Water Resources Control Board, the San Diego Regional Water Quality Control Board, the Santa Ana Regional Water Control Board and the U.S. Army Corps of Engineers Environmental Resources Branch Ecosystems Planning Section as well as concerned resources agencies, such as U. S. Fish and Wildlife Service, California Department of Fish and Game. A copy of the SWPPP, and any modifications to the SWPPP, shall be maintained at the jobsite throughout the contract duration. A copy of the NOI shall be provided to the San

Diego RWQCB. The Contractor shall follow conditions identified in the NPDES permit/SWPPP to eliminate discharge of pollutants within the waters of the United States.

The San Diego Regional Water Quality Control Board address is:

San Diego Regional Water Quality Control Board  
9174 Sky Park Court  
Suite 100  
San Diego, California 92123-4340  
ph) (858 467-2952  
fax (858) 571-6972

#### 3.1.1.2 Modifications to SWPPP

If the SWRCB or RWQCB requires modifications prior to or during the construction phase, the plan(s) shall include the use of settling basins, hay bales, and silt fences (or other appropriate measures) for any surface water diversion and groundwater (subsurface water) dewatering activities within the project site or work within any flowing streams. This plan shall also include stormwater pollution prevention measures specific to this project, such as protection of exposed slopes/banks, access routes, and temporary onsite stockpiles of excavated materials. A final water diversion plan, including structure configuration, location, construction materials, equipment, operation procedures, erosion and sediment control measures shall be included.

#### 3.1.2 Section 401 Water Quality Certification

Riverside County, California has obtained a Section 401 Water Quality Certification (WQC) permit from the California Regional Water Quality Control Board. Conditions identified in the Section 401 WQC permit shall be followed by the construction Contractor. The contractor shall obtain a copy of the Section 401 WQC permit. The Contractor shall coordinate with the Environmental Coordinator of the COE's Environmental Resources Branch, Ronald F. Lockmann at 213-452-3847 or Sarah Laughlin at 213-452-3848 or with Riverside County's Environmental Coordinator Zully C. Smith at 909-955-1233 or Randy Sheppard at 909-955-1306, for the clarification or application of the conditions identified in the Section 401 WQC permit.

#### 3.1.3 1601 Streambed Alteration Agreement

The Riverside County Flood Control and Water Conservation District (RCFCWCD) has submitted an application to the California Department of Fish and Game (CDFG) to obtain a 1601 Streambed Alteration Agreement. The Contractor shall follow measures/conditions identified in the 1601 Streambed Alteration for project construction of this reach. A copy of the 1601 Streambed Alteration Agreement will be provided to the Contractor.

### 3.2 LAND RESOURCES

The Contractor shall confine all activities to areas defined by the drawings and specifications. Prior to the beginning of any construction, the Contractor shall identify any land resources to be preserved within the

work area. Except in areas indicated on the drawings or specified to be cleared, the Contractor shall not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, topsoil, and land forms without approval. No ropes, cables, or guys shall be fastened to or attached to any trees for anchorage unless specifically authorized. The Contractor shall provide effective protection for land and vegetation resources at all times as defined in the following subparagraphs. Stone, soil, or other materials displaced into uncleared areas shall be removed by the Contractor.

#### 3.2.1 Work Area Limits

Prior to commencing construction activities, the Contractor shall mark the areas that need not be disturbed under this contract. Cactus, Yucca, shrubs, grasses, land forms and other landscape features outside the construction area shall be preserved. Isolated areas within the general work area which are not to be disturbed shall be marked or fenced. Monuments and markers shall be protected before construction operations commence. Where construction operations are to be conducted during darkness, any markers shall be visible in the dark. The Contractor's personnel shall be knowledgeable of the purpose for marking and/or protecting particular objects.

#### 3.2.2 Landscape

Trees, shrubs, vines, grasses, land forms and other landscape features indicated and defined on the drawings to be preserved shall be clearly identified by marking, fencing, or wrapping with boards, or any other approved techniques. The Contractor shall restore landscape features damaged or destroyed during construction operations outside the limits of the approved work area.

#### 3.2.3 Erosion and Sediment Controls

The Contractor shall be responsible for providing erosion and sediment control measures in accordance with Federal, State, and local laws and regulations. The erosion and sediment controls selected and maintained by the Contractor shall be such that water quality standards are not violated as a result of the Contractor's construction activities. The area of bare soil exposed at any one time by construction operations should be kept to a minimum. The Contractor shall construct or install temporary and permanent erosion and sediment control best management practices (BMPs) as specified in Paragraph EROSION AND SEDIMENT CONTROL FACILITIES. BMPs may include, but not be limited to, vegetation cover, stream bank stabilization, slope stabilization, silt fences, construction of terraces, interceptor channels, sediment traps, inlet and outfall protection, diversion channels, and sedimentation basins. The Contractor's best management practices shall also be in accordance with the National Pollutant Discharge Elimination System (NPDES) Storm Water Pollution Prevention Plan (SWPPP) which may be reviewed at the Environmental Office. Any temporary measures shall be removed after the area has been stabilized.

#### 3.2.4 Unprotected Erodible Soils



Earthwork brought to final grade shall be finished as indicated. Side slopes and back slopes shall be protected as soon as practicable upon completion of rough grading. All earthwork shall be planned and conducted to minimize the duration of exposure of unprotected soils. Except in cases where the constructed feature obscures borrow areas, quarries, and waste material areas, these areas shall not initially be totally cleared. Clearing of such areas shall progress in reasonably sized increments as needed to use the developed areas as approved by the Contracting Officer.

### 3.2.5 Disturbed Areas

The Contractor shall effectively prevent erosion and control sedimentation through approved methods including, but not limited to, the following:

- a. Retardation and control of runoff. Runoff from the construction site or from storms shall be controlled, retarded, and diverted to protected drainage courses by means of diversion ditches, benches, berms, and by any measures required by area wide plans under the Clean Water Act.

### 3.2.6 Contractor Facilities and Work Areas

The Contractor's field offices, staging areas, stockpile storage, and temporary buildings shall be placed in areas designated on the drawings or as directed by the Contracting Officer. Temporary movement or relocation of Contractor facilities shall be made only when approved. Erosion and sediment controls shall be provided for on-site borrow and spoil areas to prevent sediment from entering nearby waters. Temporary excavation and embankments for plant and/or work areas shall be controlled to protect adjacent areas.

## 3.3 WATER RESOURCES

The Contractor shall monitor construction activities to prevent pollution of surface and ground waters. Toxic or hazardous chemicals shall not be applied to soil or vegetation unless otherwise indicated. All water areas affected by construction activities shall be monitored by the Contractor. For construction activities immediately adjacent to impaired surface waters, the Contractor shall be capable of quantifying sediment or pollutant loading to that surface water when required by State or Federally issued Clean Water Act permits.

- a. The contractor shall employ conditions identified in the Best Management Practices(BMPs) manual during and after construction to minimize erosion and runoff from construction activities. The BMPs are expected to include:
  1. Use of controlled construction staging and entrance areas to minimize ground disturbance and contaminated runoff;
  2. Installation of silt fences where appropriate at the toe of slopes to prevent sloughing of materials into the channel.
- b. Measures to reduce turbidity during project construction and

periodic future maintenance would include the installation of pipe, as needed, as well as creation of low-flow channels around construction and debris removal of operations to divert water flow and avoid mixing of loose dust particles into creek flow:

1. Pipe culverts will be placed in the low flow stream where the Creek must be crossed on a regular basis. No work will be allowed in the flowing water;
  2. Silt fencing, hay bales, sand bags and/or the construction of silt catchment basins will be placed downstream of any operation which may create turbidity. Such devices will reduce turbidity to that level existing upstream of the clean out activities.
- c. Strict construction site rules for handling hazardous materials will be implemented to prevent spills and provide controlled storage away from the Creek. Petroleum products, concrete, asphalt or other coating materials, and other hazardous materials will be prevented from contaminating soil or entering surface waters.
  - d. Preparations will be made so that runoff from steep, erodible surfaces will be directed into stable areas with minimal erosion potential.
  - e. Water containing mud, silt, or other pollutants from aggregate washing or other activities will not enter the Creek.
  - f. Stationary equipment such as motors located within or adjacent to the Creek will be positioned over drip pans.
  - g. Any equipment or vehicles driven and/or operated within or adjacent to the Creek will be properly maintained to minimize leaks.
  - h. Corps' Environmental Resources Branch personnel will monitor construction records and activities to ensure compliance with water quality requirements.
  - i. The contractor shall implement erosion and sediment control measures in the project area and upstream of the project limits to prevent sloughing of materials into the flood control channel during construction.
  - j. Project plans and specifications will incorporate standards from current seismic codes.

### 3.3.1 Cofferdams, Diversions, and Dewatering Operations

Construction operations for dewatering, removal of cofferdams, tailrace excavation, and tunnel closure shall be controlled at all times to maintain compliance with existing State water quality standards and designated uses of the surface water body. The Contractor shall comply with the State of California water quality standards and anti-degradation provisions. The

Contractor will plan his operations and perform all work necessary to minimize adverse impact or violation of the water quality standard for the State of California.

The Contractor will submit to the Contracting Officer for review and approval a map identifying the location of proposed dewatering operations, and the proposed method of dewatering operations.

### 3.3.2 Stream Crossings

Stream crossings will be controlled during construction. Stream crossings shall allow movement of materials or equipment without violating water pollution control standards of the Federal, State, and local governments.

### 3.3.3 Wetlands

The Contractor shall not enter, disturb, destroy, or allow discharge of contaminants into any wetlands.

### 3.3.4 Street Sweeping

At the close of each working day, any materials as a result of construction activities, such as dirt, tracked into the adjacent streets (streets for construction access and hauling of materials) or laying uncontained in the construction areas are to be swept up. A log of street sweeping activities will be maintained and submitted monthly for compliance. See Monthly Logs.

## 3.4 AIR RESOURCES

Equipment operation and activities or processes performed by the Contractor in accomplishing the specified construction shall be in accordance with the State's rules and all Federal emission and performance laws and standards. The Contractor shall obtain and comply with Air Quality Permits. Ambient Air Quality Standards set by the Environmental Protection Agency shall be maintained. Monitoring of air quality shall be monitored by Environmental Resources Branch and contracted to implement all pertinent environmental regulations and measures including, if applicable, Section 176 (c) of the Clean Air Act conformity determination. All air areas affected by the construction activities shall be monitored by the Contractor. Monitoring results will be periodically reviewed by the Government to ensure compliance.

Special management techniques as set out below shall be implemented to control air pollution by the construction activities. These techniques supplement the requirements of Federal, State, and local laws and regulations; and the safety requirements under this Contract. If any of the following techniques conflict with the requirements of Federal, State, or local laws or regulations, or safety requirements under this contract, then those requirements shall be followed in lieu of the following.

- a. To reduce fugitive dust, the stockpile material and unpaved roads will be watered as necessary to prevent wind-generated pollution.
- b. When wind speeds exceed 20 miles per hour, excavation and gradient

operations will be suspended.

- c. Truck speeds on unpaved roads will not exceed 15 miles per hour.
- d. Where feasible, the construction Contractor will use electric power from poles.
- e. Idling time of trucks and other construction equipment will be minimized.
- f. Contractors will perform excavation, grading, materials handling, and hauling of materials in compliance with SCAQMD Rule 403, Fugitive Dust. Specific measures to be included in the specifications will address the maintenance of adequate moisture content in soils to be excavated and transported; the stabilization of exposed graded areas; the cleaning of paved roads to be used as haul roads; paving or alternate treatment of unpaved roads considered for haul roads; and prevention of soil track-out from construction areas onto paved roads. The construction Contractor will be responsible for obtaining applicable air quality permits.
- g. All trucks hauling materials subject to wind dispersal will be watered and covered.
- h. All disturbed soil areas not subject to revegetation will be stabilized with approved nontoxic soil binders, jute netting, or other methods, as appropriate.

#### 3.4.1 Particulates

Dust particles; aerosols and gaseous by-products from construction activities; and processing and preparation of materials, such as from asphaltic batch plants; shall be controlled at all times, including weekends, holidays and hours when work is not in progress. The Contractor shall maintain excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and other work areas within or outside the project boundaries free from particulates which would cause the Federal, State, and local air pollution standards to be exceeded or which would cause a hazard or a nuisance. Sprinkling, chemical treatment of an approved type, baghouse, scrubbers, electrostatic precipitators or other methods will be permitted to control particulates in the work area. Sprinkling, to be efficient, must be repeated to keep the disturbed area damp at all times. The Contractor must have sufficient, competent equipment available to accomplish these tasks. Particulate control shall be performed as the work proceeds and whenever a particulate nuisance or hazard occurs. The Contractor shall comply with all State and local visibility regulations.

##### 3.4.1.1 Other Air Pollutants

All construction equipment and trucks shall have their engines kept in a state of tune that will minimize all exhaust pollutants, and shall use fuel of a quality that does not produce excessive amounts of exhaust plumes.

Methods to reduce No levels may include the following measures:

- a. Require injection timing retard of 2 degrees on all diesel vehicles where applicable.
- b. Install high-pressure injectors on all vehicles, where feasible.
- c. Use Caterpillar pre-chamber diesel engines or equivalent, and perform proper maintenance and operation.
- d. Electrify equipment, where feasible.
- e. Maintain equipment in tune with manufacturers' specifications, except as otherwise stated above.
- f. Restrict the drilling of construction equipment to 10 minutes.
- g. Install catalytic converters on gasoline-powered equipment.
- h. Substitute gasoline-powered for diesel-powered equipment, where feasible.

#### 3.4.2 Odors

Odors from construction activities shall be controlled at all times. The odors shall not cause a health hazard and shall be in compliance with State regulations and/or local ordinances.

#### 3.4.3 Sound Intrusions

The Contractor shall keep construction activities under surveillance and control to minimize environmental damage by noise.

#### 3.4.4 Burning

Burning shall be prohibited on the Government premises.

### 3.5 CHEMICAL MATERIALS MANAGEMENT AND WASTE DISPOSAL

Disposal of wastes shall be as directed below, unless otherwise specified in other sections and/or shown on the drawings.

#### 3.5.1 Solid Wastes

Solid wastes (excluding clearing debris) shall be placed in containers which are emptied on a regular schedule. Handling, storage, and disposal shall be conducted to prevent contamination. Segregation measures shall be employed so that no hazardous or toxic waste will become co-mingled with solid waste. The Contractor shall transport solid waste off site and dispose of it in compliance with Federal, State, and local requirements for solid waste disposal. A Subtitle D RCRA permitted landfill shall be the minimum acceptable off-site solid waste disposal option. The Contractor shall verify that the selected transporters and disposal facilities have the necessary permits and licenses to operate. The Contractor shall comply

with Federal, State, and local laws and regulations pertaining to the use of landfill areas.

#### 3.5.1.1 El Sobrante Landfill

At the Contractors option, vegetation, demolition materials from VFW and other buildings, large concrete pieces, rubbish, and trash may be disposed of at the El Sobrante Landfill, 10910 Dawson Road, Corona. The Contractor shall be responsible for all necessary fees and permits that the El Sobrante Landfill requires.

#### 3.5.2 Chemicals and Chemical Wastes

Chemicals shall be dispensed ensuring no spillage to the ground or water. Periodic inspections of dispensing areas to identify leakage and initiate corrective action shall be performed and documented. This documentation will be periodically reviewed by the Government. Chemical waste shall be collected in corrosion resistant, compatible containers. Collection drums shall be monitored and removed to a staging or storage area when contents are within 6 inches of the top. Wastes shall be classified, managed, stored, and disposed of in accordance with Federal, State, and local laws and regulations.

#### 3.5.3 Contractor Generated Hazardous Wastes/Excess Hazardous Materials

Hazardous wastes are defined in 40 CFR 261, or are as defined by applicable State and local regulations. The Contractor shall take sufficient measures to prevent spillage of hazardous and toxic materials during dispensing. The Contractor shall segregate hazardous waste from other materials and wastes, shall protect it from the weather by placing it in a safe covered location, and shall take precautionary measures such as berming or other appropriate measures against accidental spillage. The Contractor shall be responsible for storage, describing, packaging, labeling, marking, and placarding of hazardous waste and hazardous material in accordance with 49 CFR 171 - 178, State, and local laws and regulations.

The Contractor shall transport Contractor generated hazardous waste off Government property within 60 days in accordance with the Environmental Protection Agency and the Department of Transportation laws and regulations. The Contractor shall dispose of hazardous waste in compliance with Federal, State and local laws and regulations. Spills of hazardous or toxic materials shall be immediately reported to the Contracting Officer. Cleanup and cleanup costs due to spills shall be the Contractor's responsibility. The disposition of Contractor generated hazardous waste and excess hazardous materials are the Contractor's responsibility.

- a. Emergency provisions to contain and clean up unintentional spills will be in place prior to the construction.
- b. Measures will be followed to avoid accidental spills of oil and grease during construction and debris removal operations. If such spills occur, the Contractor will be required clean up the affected area immediately and remove materials from the site.
- c. If a contaminated area is encountered during construction,

construction will cease in the vicinity of the contaminated area. The Contractor will perform an assessment to determine the extent and type of contamination. If necessary, the contaminated site will be remediated to minimize the potential for exposure of the public and to allow the project to be constructed safely. All appropriate authorities (including EPA and the Corps) will be notified.

- d. The Contractor will comply with existing regulatory requirements regarding worker safety.

#### 3.5.4 Fuel and Lubricants

Storage, fueling and lubrication of equipment and motor vehicles shall be conducted in a manner that affords the maximum protection against spill and evaporation. Fuel, lubricants and oil shall be managed and stored in accordance with all Federal, State, Regional, and local laws and regulations. Used lubricants and used oil to be discarded shall be stored in marked corrosion-resistant containers and recycled or disposed in accordance with 40 CFR 279, State, and local laws and regulations. Storage of fuel on the project site shall be in accordance with all Federal, State, and local laws and regulations.

#### 3.5.5 Waste Water

Disposal of waste water shall be as specified below.

- a. Waste water from construction activities, such as onsite material processing, concrete curing, foundation and concrete clean-up, water used in concrete trucks, forms, etc. shall not be allowed to enter water ways or to be discharged prior to being treated to remove pollutants. The Contractor shall dispose of the construction related waste water in accordance with all Federal, State, Regional and Local laws and regulations.
- b. For discharge of ground water, the Contractor shall surface discharge in accordance with the requirements of the NPDES or State STORM WATER DISCHARGES FROM CONSTRUCTION SITES permit.
- c. Water generated from the flushing of lines after disinfection or disinfection in conjunction with hydrostatic testing shall be discharged into the sanitary sewer with prior approval and/or notification to the Waste Water Treatment Plant's Operator.

#### 3.6 RECYCLING AND WASTE MINIMIZATION

The Contractor shall participate in State and local government sponsored recycling programs. The Contractor is further encouraged to minimize solid waste generation throughout the duration of the project.

#### 3.7 NON-HAZARDOUS SOLID WASTE DIVERSION REPORT

The Contractor shall maintain an inventory of non-hazardous solid waste diversion and disposal of construction and demolition debris. The

Contractor shall submit a report to the Contracting Officer on the first working day after each fiscal year quarter, starting the first quarter that non-hazardous solid waste has been generated. The following shall be included in the report:

- a. Construction and Demolition (C&D) Debris Disposed = \_\_\_\_\_ in cubic yards or tons, as appropriate.
- b. Construction and Demolition (C&D) Debris Recycled = \_\_\_\_\_ in cubic yards or tons, as appropriate.
- c. Total C&D Debris Generated = \_\_\_\_\_ in cubic yards or tons, as appropriate.
- d. Waste Sent to Waste-To-Energy Incineration Plant (This amount should not be included in the recycled amount) = \_\_\_\_\_ in cubic yards or tons, as appropriate.

### 3.8 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

If during excavation or other construction activities any previously unidentified or unanticipated historical, archaeological, and cultural resources are discovered or found, all activities that may damage or alter such resources shall be temporarily suspended. Resources covered by this paragraph include but are not limited to: any human skeletal remains or burials; artifacts; shell, midden, bone, charcoal, or other deposits; rock or coral alignments, pavings, wall, or other constructed features; and any indication of agricultural or other human activities. Upon such discovery or find, the Contractor shall immediately notify the Contracting Officer so that the appropriate authorities may be notified and a determination made as to their significance and what, if any, special disposition of the finds should be made. The Contractor shall cease all activities that may result in impact to or the destruction of these resources. The Contractor shall secure the area and prevent employees or other persons from trespassing on, removing, or otherwise disturbing such resources.

- a. A qualified archeologist monitor will be on site during heavy equipment activity adjacent to historic structures to ensure avoidance of identified historic resources. The Contractor shall contact Stephen Dibble, senior archeologist, (213) 452-3849 to coordinate monitoring activities.
- b. In the event that previously unknown historic or archeological features or deposits are observed by the contractor during the course of operations, work shall cease in that area, and the construction representative shall be immediately informed.

### 3.9 BIOLOGICAL RESOURCES

#### 3.9.1 Threatened and Endangered Species Protection

Although no threatened or endangered species were located within the project site, if during construction activities any threatened or endangered species are observed in or near the construction area, such



observations shall be reported immediately to the biologist on site, or Contracting Officer if a biologist is not available, so that the appropriate authorities may be notified and determination made as to what special disposition should be made. In no circumstances shall any employee directly handle any endangered species unless it is in imminent danger. The Contractor shall cease all activities that may result in an impact to or the destruction of these resources. The Contractor shall prevent his employees from trespassing on private property, removing, or otherwise disturbing any threatened or endangered species.

Based on the Environmental Impact Statement/Environmental Impact Report (EIS/EIR), September 2000, for the Murrieta Creek Flood Control, Environmental Restoration, and Recreation Project, the Corps has agreed to incorporate protocols to protect the southwestern pond turtle. The southwestern pond turtle is not federally listed as threatened or endangered, but is on the California State Sensitive Species list. To ensure protection, trapping for southwestern pond turtles within all suitable pools within the construction area in the southern portion of the project area shall occur prior to the onset of construction. At least three trapping events will occur to ensure that few or no turtles remain within the impact areas. Turtles captured shall be released downstream of the project area at a location where it would be unlikely for them to return to the project area. The details and methods of turtle relocation shall be determined in consultation with the USFWS. Either the ERB/Ecosystem Planning Section biologist or a contractor biologist supplied by the ERB/Ecosystem Planning Section staff, will conduct the surveys and trapping in coordination with the ERB/Ecosystem Planning System biologist and USFWS staff. See Section 01200, GENERAL REQUIREMENTS, paragraph BIOLOGICAL RESOURCES for additional information.

3.9.2 Protection of Biological Resources adopted as part of the EIS/EIR (SCH 2000071051, SEPTEMBER 2000)

The Contractor shall keep construction activities under surveillance, management, and control to minimize interference with, disturbance to, and damage of, native vegetation, fish, and wildlife. Species that require specific attention along with measures for their protection will be listed for all workers by the Contractor prior to beginning of construction operations. The Contractor may contact the Ecosystems Planning Section representative from the U.S. Army Corps of Engineers, Ron Lockmann at (213) 452-3847 and/or from the Riverside County Flood Control and Water Conservation District, Zully Smith at (909) 955-1233, for assistance in preparing this list. This list shall be reviewed and approved by the Contracting Officer. The Contractor shall minimize interference with, disturbance to, and damage of wildlife and plants including their habitat. In addition, the Contractor shall adhere to the following guidelines:

- a. The Construction Contractor shall mark the limits of construction prior to ground disturbing activities. These marks will be clearly visible to personnel and heavy equipment operators.
- b. The construction activities will be monitored by the Corps of Engineers.

- c. The Contractor shall prepare and submit a copy of the comprehensive best management practices plan to the Contracting Officer.
- d. The removal of riparian vegetation deemed suitable for nesting will be prohibited during the period of March 15 through July 30. In making this determination, the quality, composition, and patch size will be taken into consideration.
- e. Salvaging plants will be allowed and must meet the requirements of the mitigation plantings as shown on the drawings.
- f. Trapping for turtles within all suitable pools within the construction area in the southern portion of the project area shall occur prior to the onset of construction. See Paragraph THREATENED AND ENDANGERED SPECIES PROTECTION.
- g. For temporary impacts to all other jurisdictional waters and wetlands, the designated "unmaintained corridor" will be planted with native species, including tree transplants, as feasible, to enhance the canopy cover.
- h. In-kind compensatory mitigation would be required for all significant direct and permanent losses of wetlands, riparian, and Riversidian sage scrub. This habitat creation would occur within or adjacent to the Murrieta Creek system in areas not affected by the proposed flood control project.
- i. Wetland and riparian habitat creation would occur in areas with suitable hydrology and soils to support the respective habitats. Habitat creation would include vegetating the mitigation site with select container plantings, use of pole plantings, application of a native hydroseed mix, and a 3 to 5-year maintenance and monitoring program to ensure that a native plant cover is achieved and aggressive nonnative species do not out-compete the native species.
- j. To mitigate for the direct impact to Riversidian sage scrub, the upper sideslopes would be revegetated using select container plantings, application of a native hydroseed mix, and a 3 to 5-year maintenance and monitoring program to ensure that a native plant cover is achieved and nonnative species do not out-compete the native upland species.
- k. Temporary impacts would be mitigated through the implementation of a revegetation plan designed to minimize the duration of temporary impacts by accelerating the natural recruitment process within the affected areas. For temporary impacts to all other jurisdictional waters and wetlands, the designated "unmaintained corridor" will be planted with native species, including tree transplants, as feasible, to enhance the canopy cover.
- l. The USACOE has proposed to re-vegetate the remainder of the invert and sideslopes to fully compensate for impacts to wildlife

movement and connectivity impacted by construction. Accordingly, revegetation would occur in the unmaintained portion of the channel immediately following the disturbance/removal of sensitive habitat.

m. No pets shall be allowed within the construction area.

### 3.10 PREVIOUSLY USED EQUIPMENT

The Contractor shall clean all previously used construction equipment prior to bringing it onto the project site. The Contractor shall ensure that the equipment is free from soil residuals, egg deposits from plant pests, noxious weeds, and plant seeds. The Contractor shall consult with the USDA jurisdictional office for additional cleaning requirements.

### 3.11 Maintenance of Pollution Control Facilities

The Contractor shall maintain permanent and temporary pollution control facilities and devices for the duration of the contract or for that length of time construction activities create the particular pollutant.

### 3.12 TRAINING OF CONTRACTOR PERSONNEL

The Contractor's personnel shall be trained in all phases of environmental protection and pollution control. The Contractor shall conduct environmental protection/pollution control meetings for all Contractor personnel prior to commencing construction activities. Additional meetings shall be conducted for new personnel and when site conditions change. The training and meeting agenda shall include: methods of detecting and avoiding pollution; familiarization with statutory and contractual pollution standards; installation and care of devices, vegetative covers, and instruments required for monitoring purposes to ensure adequate and continuous environmental protection/pollution control; anticipated hazardous or toxic chemicals or wastes, and other regulated contaminants; recognition and protection of archaeological sites, artifacts, wetlands, and endangered species and their habitat that are known to be in the area.

### 3.13 POST CONSTRUCTION CLEANUP

The Contractor shall clean up all areas used for construction in accordance with Contract Clause: "Cleaning Up". The Contractor shall, unless otherwise instructed in writing by the Contracting Officer, obliterate all signs of temporary construction facilities such as haul roads, work area, structures, foundations of temporary structures, stockpiles of excess or waste materials, and other vestiges of construction prior to final acceptance of the work. The disturbed area shall be graded, filled and the entire area seeded unless otherwise indicated.

### 3.14 EROSION AND SEDIMENT CONTROL FACILITIES

#### 3.14.1 INSTALLATION OF SILT FENCES

Silt fences shall extend a minimum of 16 inches above the ground surface and shall not exceed 34 inches above the ground surface. Filter fabric

shall be from a continuous roll cut to the length of the barrier to avoid the use of joints. When joints are unavoidable, filter fabric shall be spliced together at a support post, with a minimum 6 inch overlap, and securely sealed. A trench shall be excavated approximately 4 inches wide and 4 inches deep on the upslope side of the location of the silt fence. The 4-inch by 4-inch trench shall be backfilled and the soil compacted over the filter fabric. Silt fences shall be removed upon approval by the Contracting Officer.

#### 3.14.2 INSTALLATION OF STRAW BALES

Straw bales shall be placed in a single row, lengthwise on the contour, with ends of adjacent bales tightly abutting one another. Straw bales shall be installed so that bindings are oriented around the sides rather than along the tops and bottoms of the bales in order to prevent deterioration of the bindings. The barrier shall be entrenched and backfilled. A trench shall be excavated the width of a bale and the length of the proposed barrier to a minimum depth of 4 inches. After the bales are staked and chinked (gaps filled by wedging with straw), the excavated soil shall be backfilled against the barrier. Backfill soil shall conform to the ground level on the downhill side and shall be built up to 4 inches against the uphill side of the barrier. Loose straw shall be scattered over the area immediately uphill from a straw bale barrier to increase barrier efficiency. Each bale shall be securely anchored by at least two stakes driven through the bale. The first stake or steel post in each bale shall be driven toward the previously laid bale to force the bales together. Stakes or steel pickets shall be driven a minimum 18 inches deep into the ground to securely anchor the bales.

#### 3.14.3 MAINTENANCE

The Contractor shall maintain the temporary and permanent vegetation, erosion and sediment control measures, and other protective measures in good and effective operating condition by performing routine inspections to determine condition and effectiveness, by restoration of destroyed vegetative cover, and by repair of erosion and sediment control measures and other protective measures. The following procedures shall be followed to maintain the protective measures.

##### 3.14.3.1 Silt Fence Maintenance

Silt fences shall be inspected in accordance with paragraph INSPECTIONS. Any required repairs shall be made promptly. Close attention shall be paid to the repair of damaged silt fence resulting from end runs and undercutting. Should the fabric on a silt fence decompose or become ineffective, and the barrier is still necessary, the fabric shall be replaced promptly. Sediment deposits shall be removed when deposits reach one-third of the height of the barrier. When a silt fence is no longer required, it shall be removed. The immediate area occupied by the fence and any sediment deposits shall be shaped to an acceptable grade.

##### 3.14.3.2 Straw Bale Maintenance

Straw bale barriers shall be inspected in accordance with paragraph

INSPECTIONS. Close attention shall be paid to the repair of damaged bales, end runs and undercutting beneath bales. Necessary repairs to barriers or replacement of bales shall be accomplished promptly. Sediment deposits shall be removed when deposits reach one-half of the height of the barrier. Bale rows used to retain sediment shall be turned uphill at each end of each row. When a straw bale barrier is no longer required, it shall be removed. The immediate area occupied by the bales and any sediment deposits shall be shaped to an acceptable grade.

#### 3.14.3.3 Diversion Dike Maintenance

Diversion dikes shall be inspected in accordance with paragraph INSPECTIONS. Close attention shall be paid to the repair of damaged diversion dikes and necessary repairs shall be accomplished promptly. When diversion dikes are no longer required, they shall be shaped to an acceptable grade.

#### 3.14.4 INSPECTIONS

##### 3.14.4.1 General

The Contractor shall inspect disturbed areas of the construction site, areas used for storage of materials that are exposed to precipitation that have not been finally stabilized, stabilization practices, structural practices, other controls, and area where vehicles exit the site at least once every seven (7) calendar days and within 24 hours of the end of any storm that produces 0.5 inches or more rainfall at the site. Where sites have been finally stabilized, such inspection shall be conducted at least once every month.

##### 3.14.4.2 Inspections Details

Disturbed areas and areas used for material storage that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the Storm Water Pollution Prevention Plan shall be observed to ensure that they are operating correctly. Discharge locations or points shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Locations where vehicles exit the site shall be inspected for evidence of offsite sediment tracking.

##### 3.14.4.3 Inspection Reports

For each inspection conducted, the Contractor shall prepare a report summarizing the scope of the inspection, name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the Storm Water Pollution Prevention Plan, maintenance performed, and actions taken. The report shall be furnished to the Contracting Officer within 24 hours of the inspection as a part of the Contractor's daily CQC REPORT. A copy of the inspection report shall be maintained on the job site.

-- End of Section --



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SECTION 01420

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## SECTION 01420

## SOURCES FOR REFERENCE PUBLICATIONS

## PART 1 GENERAL

## 1.1 REFERENCES

Various publications are referenced in other sections of the specifications to establish requirements for the work. These references are identified in each section by document number, date and title. The document number used in the citation is the number assigned by the standards producing organization, (e.g. ASTM B 564 Nickel Alloy Forgings). However, when the standards producing organization has not assigned a number to a document, an identifying number has been assigned for reference purposes.

## 1.2 ORDERING INFORMATION

The addresses of the standards publishing organizations whose documents are referenced in other sections of these specifications are listed below, and if the source of the publications is different from the address of the sponsoring organization, that information is also provided. Documents listed in the specifications with numbers which were not assigned by the standards producing organization should be ordered from the source by title rather than by number.

## ACI INTERNATIONAL (ACI)

P.O. Box 9094  
Farmington Hills, MI 48333-9094  
Ph: 248-848-3700  
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NOTE: COE Handbook for Concrete and Cement (Documents w/prefix CRD-C) (1949-present; 2 Vol) free to Government offices; \$10.00 plus \$8.00 per yr for 4 qtrly supplements to others). Individual documents, single copies free. Order from address above.

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PART 2 MATERIALS - NOT USED

PART 3 EXECUTION - NOT USED

-- End of Section --

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## SECTION 01451

## CONTRACTOR QUALITY CONTROL

## PART 1 GENERAL

## 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

## ASTM INTERNATIONAL (ASTM)

ASTM D 3740 (2001) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction

ASTM E 329 (2000b) Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

## 1.2 PAYMENT

Separate payment will not be made for providing and maintaining an effective Quality Control program, and all costs associated therewith shall be included in the applicable unit prices or lump-sum prices contained in the Bidding Schedule.

## 1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The "RE" designates that the Resident Office will review the submittal for the Government. Submit the following in accordance with Section 01330, SUBMITTAL PROCEDURES:

## SD-01 Preconstruction Submittals

Quality Control Plan; G, RE.

The Quality Control Plan.

## PART 2 PRODUCTS (Not Applicable)

## PART 3 EXECUTION

## 3.1 GENERAL REQUIREMENTS

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract Clause titled "Inspection of Construction." The quality control system shall consist of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. The system shall cover all construction operations, both onsite and offsite, and shall be keyed to the proposed construction sequence. The project manager will be held responsible for the quality of work on the job and is subject to removal by the Contracting Officer for non-compliance with the quality requirements specified in the contract. The project manager in this context shall be responsible for the overall construction activities at the site, including quality and production. The project manager shall maintain a physical presence at the site at all times, except as otherwise acceptable to the Contracting Officer, and shall be responsible for all construction and construction related activities at the site.

### 3.2 QUALITY CONTROL PLAN

The Contractor shall furnish for review by the Government, not later than 10 days after receipt of notice to proceed, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of the Contract Clause titled "Inspection of Construction." The plan shall identify personnel, procedures, control, instructions, tests, records, and forms to be used. The Government will consider an interim plan for the first 30 days of operation. Construction will be permitted to begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the features of work included in an accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional features of work to be started.

#### 3.2.1 Content of the CQC Plan

The CQC Plan shall include, as a minimum, the following to cover all construction operations, both onsite and offsite, including work by subcontractors, fabricators, suppliers, and purchasing agents:

- a. A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified. The staff shall include a CQC System Manager who shall report to the project manager.
- b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.
- c. A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the contract. The CQC System Manager shall issue letters of direction to all other various quality control representatives



outlining duties, authorities, and responsibilities. Copies of these letters shall also be furnished to the Government.

- d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, offsite fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with Section 01330 SUBMITTAL PROCEDURES.
- e. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. (Laboratory facilities will be approved by the Contracting Officer.)
- f. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.
- g. Procedures for tracking construction deficiencies from identification through acceptable corrective action. These procedures shall establish verification that identified deficiencies have been corrected.
- h. Reporting procedures, including proposed reporting formats.
- i. A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks, has separate control requirements, and may be identified by different trades or disciplines, or it may be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable features under a particular section. This list will be agreed upon during the coordination meeting.

### 3.2.2 Acceptance of Plan

Acceptance of the Contractor's plan is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the construction. The Government reserves the right to require the Contractor to make changes in his CQC Plan and operations including removal of personnel, as necessary, to obtain the quality specified.

### 3.2.3 Notification of Changes

After acceptance of the CQC Plan, the Contractor shall notify the Contracting Officer in writing of any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

### 3.3 COORDINATION MEETING

After the Preconstruction Conference, before start of construction, and prior to acceptance by the Government of the CQC Plan, the Contractor shall

meet with the Contracting Officer or Authorized Representative and discuss the Contractor's quality control system. The CQC Plan shall be submitted for review a minimum of 10 calendar days prior to the Coordination Meeting.

During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting shall be prepared by the Government and signed by both the Contractor and the Contracting Officer. The minutes shall become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

### 3.4 QUALITY CONTROL ORGANIZATION

#### 3.4.1 Personnel Requirements

The requirements for the CQC organization are a CQC System Manager and sufficient number of additional qualified personnel to ensure safety and contract compliance. The Safety and Health Manager shall receive direction and authority from the CQC System Manager and shall serve as a member of the CQC staff. Personnel identified in the technical provisions as requiring specialized skills to assure the required work is being performed properly will also be included as part of the CQC organization. The Contractor's CQC staff shall maintain a presence at the site at all times during progress of the work and have complete authority and responsibility to take any action necessary to ensure contract compliance. The CQC staff shall be subject to acceptance by the Contracting Officer. The Contractor shall provide adequate office space, filing systems and other resources as necessary to maintain an effective and fully functional CQC organization. Complete records of all letters, material submittals, show drawing submittals, schedules and all other project documentation shall be promptly furnished to the CQC organization by the Contractor. The CQC organization shall be responsible to maintain these documents and records at the site at all times, except as otherwise acceptable to the Contracting Officer.

#### 3.4.2 CQC System Manager

The Contractor shall identify as CQC System Manager an individual within the onsite work organization who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. The CQC System Manager shall be a graduate engineer, a graduate of construction management, or construction person with a minimum of 5 years construction experience on construction similar to this contract. This CQC System Manager shall be on the site at all times during construction and shall be employed by the prime Contractor. The CQC System Manager shall be assigned no other duties. An alternate for the CQC System Manager shall be identified in the plan to serve in the event of the System Manager's absence. The requirements for the alternate shall be the same as for the designated CQC System Manager.

#### 3.4.3 CQC Personnel

In addition to CQC personnel specified elsewhere in the contract, the Contractor shall provide as part of the CQC organization specialized personnel to assist the CQC System Manager for the following areas: civil, structural, materials technician. These individuals may be employees of the prime or subcontractor; be responsible to the CQC System Manager; be physically present at the construction site during work on their areas of responsibility; have the necessary education and/or experience in accordance with the experience matrix listed herein. These individuals may perform other duties but must be allowed sufficient time to perform their assigned quality control duties as described in the Quality Control Plan.

#### Experience Matrix

	Area	Qualifications
a.	Civil	Graduate Civil Engineer with 2 years experience in the type of work being performed on this project or technician with 5 yrs related experience
b.	Concrete, Pavements and Soils	Materials Technician with 2 yrs experience for the appropriate area

#### 3.4.4 Additional Requirement

In addition to the above experience and education requirements the CQC System Manager shall have completed the course entitled "Construction Quality Management For Contractors".

#### 3.4.5 Organizational Changes

The Contractor shall maintain the CQC staff at full strength at all times. When it is necessary to make changes to the CQC staff, the Contractor shall revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

#### 3.5 SUBMITTALS AND DELIVERABLES

Submittals, if needed, shall be made as specified in Section 01330 SUBMITTAL PROCEDURES. The CQC organization shall be responsible for certifying that all submittals and deliverables are in compliance with the contract requirements.

#### 3.6 CONTROL

Contractor Quality Control is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. At least three phases of control shall be conducted by the CQC System Manager for each definable feature of work as follows:

### 3.6.1 Preparatory Phase

This phase shall be performed prior to beginning work on each definable feature of work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. This phase shall include:

- a. A review of each paragraph of applicable specifications, reference codes, and standards. A copy of those sections of referenced codes and standards applicable to that portion of the work to be accomplished in the field shall be made available by the Contractor at the preparatory inspection. These copies shall be maintained in the field and available for use by Government personnel until final acceptance of the work.
- b. A review of the contract drawings.
- c. A check to assure that all materials and/or equipment have been tested, submitted, and approved.
- d. Review of provisions that have been made to provide required control inspection and testing.
- e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.
- f. A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.
- g. A review of the appropriate activity hazard analysis to assure safety requirements are met.
- h. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.
- i. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.
- j. Discussion of the initial control phase.
- k. The Government shall be notified at least 48 hours in advance of beginning the preparatory control phase. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. The results of the preparatory phase actions shall be documented by separate minutes prepared by the CQC System Manager and attached to the daily CQC report. The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

### 3.6.2 Initial Phase

This phase shall be accomplished at the beginning of a definable feature of work. The following shall be accomplished:

- a. A check of work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.
- b. Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing.
- c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.
- d. Resolve all differences.
- e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.
- f. The Government shall be notified at least 48 hours in advance of beginning the initial phase. Separate minutes of this phase shall be prepared by the CQC System Manager and attached to the daily CQC report. Exact location of initial phase shall be indicated for future reference and comparison with follow-up phases.
- g. The initial phase should be repeated for each new crew to work onsite, or any time acceptable specified quality standards are not being met.

### 3.6.3 Follow-up Phase

Daily checks shall be performed to assure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional features of work which may be affected by the deficient work. The Contractor shall not build upon nor conceal non-conforming work.

### 3.6.4 Additional Preparatory and Initial Phases

Additional preparatory and initial phases shall be conducted on the same definable features of work if: the quality of on-going work is unacceptable; if there are changes in the applicable CQC staff, onsite production supervision or work crew; if work on a definable feature is resumed after a substantial period of inactivity; or if other problems develop.

## 3.7 TESTS

### 3.7.1 Testing Procedure

The Contractor shall perform specified or required tests to verify that control measures are adequate to provide a product which conforms to contract requirements. Upon request, the Contractor shall furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and/or acceptance tests when specified. The Contractor shall procure the services of a Corps of Engineers certified testing laboratory or establish a certified testing laboratory at the project site. The Contractor shall perform the following activities and record and provide the following data:

- a. Verify that testing procedures comply with contract requirements.
- b. Verify that facilities and testing equipment are available and comply with testing standards.
- c. Check test instrument calibration data against certified standards.
- d. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.
- e. Results of all tests taken, both passing and failing tests, shall be recorded on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test shall be given. If approved by the Contracting Officer, actual test reports may be submitted later with a reference to the test number and date taken. An information copy of tests performed by an offsite or commercial test facility shall be provided directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract.

### 3.7.2 Testing Laboratories

#### 3.7.2.1 Capability Check

The Government reserves the right to check laboratory equipment in the proposed laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing procedures and techniques. Laboratories utilized for testing soils, concrete, asphalt, and steel shall meet criteria detailed in ASTM D 3740 and ASTM E 329.

#### 3.7.2.2 Capability Recheck

If the selected laboratory fails the capability check, the Contractor will be assessed a charge of \$500.00 to reimburse the Government for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory. Such costs will be deducted from the contract amount due the Contractor.

### 3.7.3 Onsite Laboratory

The Government reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests, and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

### 3.7.4 Furnishing or Transportation of Samples for Testing

Costs incidental to the transportation of samples or materials shall be borne by the Contractor. Samples of materials for test verification and acceptance testing by the Government shall be delivered to a Quality Assurance Laboratory, at an address to be determined.

Coordination for each specific test, exact delivery location, and dates will be made through the Area Office.

## 3.8 COMPLETION INSPECTION

### 3.8.1 Punch-Out Inspection

Near the end of the work, or any increment of the work established by a time stated in the Special Clause, "Commencement, Prosecution, and Completion of Work", or by the specifications, the CQC Manager shall conduct an inspection of the work. A punch list of items which do not conform to the approved drawings and specifications shall be prepared and included in the CQC documentation, as required by paragraph DOCUMENTATION. The list of deficiencies shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected.

Once this is accomplished, the Contractor shall notify the Government that the facility is ready for the Government Pre-Final inspection.

### 3.8.2 Pre-Final Inspection

The Government will perform the pre-final inspection to verify that the facility is complete and ready to be occupied. A Government Pre-Final Punch List may be developed as a result of this inspection. The Contractor's CQC System Manager shall ensure that all items on this list have been corrected before notifying the Government, so that a Final inspection with the customer can be scheduled. Any items noted on the Pre-Final inspection shall be corrected in a timely manner. These inspections and any deficiency corrections required by this paragraph shall be accomplished within the time slated for completion of the entire work or any particular increment of the work if the project is divided into increments by separate completion dates.

### 3.8.3 Final Acceptance Inspection

The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and the Contracting Officer's Representative shall be in attendance at the final acceptance inspection. Additional Government personnel including, but not limited to, those from Base/Post Civil Facility Engineer user groups, and major

commands may also be in attendance. The final acceptance inspection will be formally scheduled by the Contracting Officer based upon results of the Pre-Final inspection. Notice shall be given to the Contracting Officer at least 14 days prior to the final acceptance inspection and shall include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the contract clause titled "Inspection of Construction".

### 3.9 DOCUMENTATION

The Contractor shall maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers and shall be on an acceptable form that includes, as a minimum, the following information:

- a. Contractor/subcontractor and their area of responsibility.
- b. Operating plant/equipment with hours worked, idle, or down for repair.
- c. Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.
- d. Test and/or control activities performed with results and references to specifications/drawings requirements. The control phase shall be identified (Preparatory, Initial, Follow-up). List of deficiencies noted, along with corrective action.
- e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.
- f. Submittals and deliverables reviewed, with contract reference, by whom, and action taken.
- g. Offsite surveillance activities, including actions taken.
- h. Job safety evaluations stating what was checked, results, and instructions or corrective actions.
- i. Instructions given/received and conflicts in plans and/or specifications.
- j. Contractor's verification statement: Daily reports, or reports from the Contractor do not constitute acceptance, approval, or direction from the Government to the Contractor, nor does it relieve any responsibility of the Contractor.



These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the contract. The original and one copy of these records in report form shall be furnished to the Government daily within 12 hours after the date covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, one report shall be prepared and submitted for every 7 days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the CQC System Manager. The report from the CQC System Manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel.

### 3.10 SAMPLE FORMS

Sample forms enclosed at the end of this section.

### 3.11 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

-- End of Section --

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## SECTION 01702

## AS-BUILT DRAWINGS

## PART 1 GENERAL

## 1.1 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The "RE" designates that the Resident Office will review the submittal for the Government. Submit the following in accordance with Section 01330, SUBMITTAL PROCEDURES: Due dates shall be as indicated in applicable paragraphs and all submittals shall be completed before final payment will be made.

SD-11 Closeout Submittals

As-built Drawings.

Red marked up blue-line drawings.

## PART 2 PRODUCTS (NOT APPLICABLE)

## PART 3 EXECUTION

## 3.1 AS-BUILT FIELD DATA

## 3.1.1 General

The Contractor shall prepare and furnish the as-built drawings for the project. The as-built drawings shall be a record of the construction as installed and completed by the Contractor. They shall include all the information shown on the contract set of drawings and a record of all deviations, modifications, or changes from those drawings, however minor, which were incorporated in the work, all additional work not appearing on the contract drawings, and all changes which are made after final inspection of the contract work. In the event the Contractor accomplishes additional work which changes the as-built conditions of the facility after submission of the as-built drawings, the Contractor shall furnish revised and/or additional drawings as required to depict as-built conditions. The requirements for these additional drawings will be the same as for the as-built drawings included in the original submission. The drawings shall show the following information, but not be limited thereto:

(a) The location and description of any utility lines or other installations of any kind or description known to exist within the construction area. The location includes dimensions to permanent features.

(b) The location and dimensions of any changes within the building or structures.

(c) Correct grade or alignment of roads, channels, structures or utilities if any changes were made from contract plans.

(d) Correct elevations if changes were made in site grading.

(e) Changes in details of design or additional information obtained from working drawings specified to be prepared and/or furnished by the Contractor including but not limited to fabrication, erection, installation plans and placing details, pipe sizes, dimensions of equipment foundations, etc.

(f) The topography and grades of all drainage installed or affected as a part of the project construction.

(g) All changes or modifications which result from the final inspection.

(h) Where contract drawings or specifications allow options, only the option actually used in the construction shall be shown on the as-built drawings. The option not used shall be deleted.

### 3.1.2 Preliminary As-Built Drawings

The Contractor shall maintain four (4) sets of full size, blue-line prints marked up in red to show the as-built conditions. The sets of as-built prints shall be kept current and available at the job site at all times. All changes from what is shown on the contract plans, whether it be from changes requested by the Contracting Officer or resulting from additional information which might be uncovered in the course of construction, shall be accurately and neatly recorded as they occur by means of details and notes. The marked-up as-built prints will be jointly inspected for accuracy and completeness by the Contracting Officer and Contractor prior to submission of each monthly pay estimate. Failure to keep the As-Built Field Data current shall be sufficient justification to withhold a retained percentage from the monthly pay estimate. Information to be included on these preliminary drawings shall conform to the requirements as stated above. Any and all as-built modifications shall be reflected on all sheets affected by the modifications.

#### 3.1.2.1 Submittal of the Preliminary As-Built Field Data

One (1) full size set of marked up drawings with the as-built field data shall be submitted to the Contracting Officer for review and approval a minimum of 20 calendar days prior to the date of final inspection. If review of the preliminary as-built drawings reveals errors and/or omissions, the drawings will be returned to the Contractor for corrections. The Contractor shall make all corrections and return the drawings to the Contracting Officer within 10 calendar days of receipt.

#### 3.1.2.2 FINAL AS-BUILT DRAWINGS

The final as-built record drawings shall be completed and returned together with the approved preliminary as-built drawings to the Contracting Officer within 30 calendar days of final acceptance. The Contracting Officer will review all final as-built record drawings for accuracy and conformance to the drafting standards and other requirements contained in DIVISION 1 GENERAL REQUIREMENTS. The drawings shall be returned to the Contractor if corrections are necessary. The Contractor shall make all corrections and shall return the drawings to the Contracting Officer within 5 calendar days of receipt. All project files, whether revised or not, shall be provided to the Contracting Officer.

### 3.2 AS-BUILT ELECTRONIC FILE DRAWINGS

#### 3.2.1 General

The Construction Contractor is not required to submit the red-lined as-built field data in electronic format. The United States Army Corps of Engineers will accomplish the electronic format of the As-Built Field Data from the Construction Contractors red-lined marked up blue-line as-built field data prints.

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## SECTION 02100

## DIVERSION AND CONTROL OF WATER

## PART 1 GENERAL

## 1.1 REQUIREMENT

## 1.1.1 General

All permanent construction shall be carried on in areas free from water. Storm runoff from watersheds can be rapid and, during periods of rain, flash flooding may be expected. The project consists of improvements to a natural drainage course. Furthermore, the water table fluctuates and may be within excavation prisms of the project. The Contractor shall divert and control water from the water table throughout the construction duration of the project at no additional cost to the Government.

Within 10 days after receipt of Notice to Proceed, the Contractor shall submit a control of water plan showing the method that he proposes to use to protect each working area. Damage to all work (including temporary construction), utilities, materials, equipment, and plant shall be repaired to the satisfaction of the Contracting Officer at the Contractor's expense, regardless of the cause of such damage.

## 1.1.2 Requirements

The Contractor is responsible for control of all runoff entering the construction area. The runoff will include water originating from upstream drainages; and in addition any and all seepage and groundwater originating within the work. The work site may be inundated because of runoff. The Contractor shall be responsible for protection of work site during times of runoff by his own means as described in his Storm Water Pollution Prevention Plan (SWPPP) as required per Section 01200 GENERAL REQUIREMENTS and Section 01355, ENVIRONMENTAL PROTECTION and shall be approved by the Contracting Officer.

## 1.1.3 Drainage Ditches

The location and depth of any drainage ditch to be constructed under this contract shall be subject to the approval of the Contracting Officer. Special precautions shall be taken to avoid impairing the permanent subgrade. Damaged subgrade shall be replaced in accordance with Section 02300 EARTHWORK by and at the expense of the Contractor.

## 1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office



that will review the submittal for the Government. The "RE" designates that the Resident Office will review the submittal for the Government. Submit the following in accordance with Section 01330, SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Control of Water Plan; G, RE.

The Contractor shall submit 3 copies of the plan.

PART 2 PRODUCTS (Not Applicable)

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## SECTION 02230

## CLEAR SITE AND REMOVE OBSTRUCTIONS

## PART 1 GENERAL

## 1.1 DEFINITIONS

## 1.1.1 Clearing

Clearing shall consist of the felling, trimming, and cutting of trees into sections and the satisfactory disposal of the trees and other vegetation designated for removal, including down timber, snags, brush, manmade trash, manmade debris, and rubbish occurring in the areas to be cleared.

## 1.1.2 Grubbing

Grubbing shall consist of the removal and disposal of stumps, roots larger than 3 inches in diameter, and matted roots from the designated grubbing areas. Grubbing shall include chasing roots larger than 3 inches in diameter a minimum of 3.0 feet below finished design grade of channel invert and slopes.

## 1.2 SUBMITTALS (NOT APPLICABLE)

## 1.3 ENVIRONMENTAL PROTECTION

All work and Contractor operations shall comply with the requirements of Section 01355 ENVIRONMENTAL PROTECTION and Section 02300 EARTHWORK.

## 1.4 BURNING

The use of burning at the project site for the disposal of refuse and debris will not be permitted.

## PART 2 PRODUCTS (Not Applicable)

## PART 3 EXECUTION

## 3.1 REQUIREMENTS

## 3.1.1 General

Except as otherwise specified, and/or indicated, areas to be cleared will be limited to actual excavation areas, and areas on which fills and/or structures are to be placed. The removal of trees, shrubs, turf, and other vegetation outside of these areas shall be held to a minimum and care shall be exercised not to damage any trees, shrubs, turf, or vegetation which can be left in place.

### 3.1.2 Existing Structures and Obstructions

The Contractor shall clear and grub areas of fill and excavation, and remove and dispose of existing structures (including foundations and substructures) and obstructions necessary for project construction, except for those structures which are identified to be protected in place as shown on the drawings.

### 3.2 CLEARING

All manmade trash, manmade debris, rubbish, waste dumps, and debris areas shall be cleared. Vegetation including grasses, shrubs and weeds shall be removed by grading the existing ground surface to a depth of 6 inches, except such vegetation as may be indicated or directed to be left standing.

Vegetation to be left standing shall be protected from damage incident to clearing, grubbing, and construction operations by the erection of barriers or by such other means as the circumstances require. Clearing shall also include the removal and disposal of buildings or other structures that protude upon or obstruct the proposed work. Such removal shall include but not be limited to the VFW Hall, Skating rink, BMX track and all associated features such as footings, benches, light posts, electrical wiring, etc. Structures that are patially obstructing proposed work shall be removed entirely.

### 3.3 GRUBBING

Grubbing shall consist of removing non-salvaged roots larger than 3 inches in diameter, matted roots, and other objectionable vegetable matter in the required fill areas, foundation areas, and all excavation areas. In grubbing roots, 2 foot diameter roots shall be removed to below the depth of the required excavation or existing ground level, whichever is lower. Depressions made by grubbing shall be filled with suitable material and compacted to make the surface conform with the original adjacent surface of the ground.

### 3.4 Trash and Construction Debris

Surface trash and construction debris may be present at the project site. Surface trash may consist of manmade trash, manmade debris, rubbish, car parts, car bodies, furniture, appliances whole or in parts. Surface trash and construction debris shall be removed from within the limits of the right-of-way and temporary construction easements for all areas downstream of the First Street bridge.

### 3.5 Environmental Assessment Requirement

The Contractor shall notify the Contracting Officer 14 calendar days prior to the start of clearing and grubbing activities in accordance with Section 01200 GENERAL REQUIREMENTS, Paragraph ENVIRONMENTAL ASSESSMENT REQUIREMENT.

### 3.6 DISPOSAL OF GRUBBED AND REMOVED MATERIAL

Trash, construction debris, and material from grubbing, that is designated as scrap, shall become the property of the Contractor, and shall be removed

from the site. Scrap and unsatisfactory soils and materials and unstable soils and materials as described in Section 02300 EARTHWORK and in Section 01200 GENERAL REQUIREMENTS shall become the property of the Contractor, and shall be removed from the site at no additional cost to the Government. Disposal shall be in accordance with the requirements of Section 01355 ENVIRONMENTAL PROTECTION.

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## SECTION 02300A

## EARTHWORK

## PART 1 GENERAL

## 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

## ASTM INTERNATIONAL (ASTM)

ASTM D 422	(1963; R 1998) Particle-Size Analysis of Soils
ASTM D 1140	(2000) Amount of Material in Soils Finer than the No. 200 (75-micrometer) Sieve
ASTM D 1556	(2000) Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D 1557	(2000) Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/cu. ft. (2,700 kN-m/cu.m.))
ASTM D 2487	(2000) Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D 2922	(2001) Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
ASTM D 3017	(2001) Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)

## U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(1996) U.S. Army Corps of Engineers Safety and Health Requirements Manual
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## 1.2 DEFINITIONS

## 1.2.1 Unsatisfactory Materials

Unsatisfactory materials include those classified by ASTM D 2487 as Pt, OH, OL, CH and MH; stones greater than 8 inches; concrete or asphalt debris; trash; refuse; and material containing root and other organic material. The Contracting Officer shall be notified of any contaminated materials.

### 1.2.2 Satisfactory Materials

Satisfactory materials shall comprise any soil or rock not classified as unsatisfactory.

### 1.2.3 Degree of Compaction

Degree of compaction required, except as noted in the second sentence, is expressed as a percentage of the maximum density obtained by the test procedure presented in ASTM D 1557 abbreviated as a percent of laboratory maximum density.

## 1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

#### SD-01 Preconstruction Submittals

Excavation plan

See description in paragraph, Excavation Plan.

Haul route plan; G.

The Contractor shall submit a haul route plan for removal of required excavated materials and for placing required fill materials.

#### SD-02 Shop Drawings

Explosive Storage Location; G.

The contractor shall submit to the Contracting Officer drawings showing the location, access to and type of construction of the proposed storage magazine for explosives, and cap house.

#### SD-05 Design Data

Blast Data Report

The Contractor shall submit Pre- and Post-Blast Reports which shall contain all of the pertinent data on the location by station, ground surface elevation in the area of the blast; diameter, spacing, depth, over-depth, pattern and inclination of blast holes; the type, strength, amount, distribution and powder factor for the explosives to be used and actually used per hole and per blast; the sequence and pattern of delays, and description and purpose of special methods.

#### SD-06 Test Reports

## Testing

Within 24 hours of conclusion of physical tests, 3 copies of test results, including calibration curves and results of calibration tests.

### SD-07 Certificates

## Testing

Qualifications of the commercial testing laboratory or Contractor's testing facilities.

## 1.4 SUBSURFACE DATA

Subsurface soil boring logs are shown on the drawings. Additional information including the subsoil investigation report is available through the Contracting Officer at the Los Angeles District Office. These data represent the best subsurface information available; however, variations may exist in the subsurface between boring locations.

## 1.5 CLASSIFICATION OF EXCAVATION

No consideration will be given to the nature of the materials, and all excavation will be designated as unclassified excavation. Note that downstream of Station 39+00 substantial quantities of granitic bedrock will be encountered. While some outcrops are labeled on the plans, much bedrock is buried under a thin layer of alluvium.

## 1.6 QUALITY ASSURANCE TESTING

In addition to the Contractor quality control testing specified in paragraph TESTING, the Contracting Officer will conduct quality assurance tests at a rate of approximately 1 quality assurance test for every ten quality control tests. The Contractor shall vary his operations where directed to allow the Contracting Officer to conduct these tests.

## 1.7 UTILIZATION OF EXCAVATED MATERIALS

Satisfactory materials removed from excavations which are not to be used as Compacted Fill may be disposed of in the designated disposal area. The designated disposal area shall be cleared and grubbed before disposal of material thereon. The disposal area shall be left in a neat condition, graded to drain and in accordance with SECTION: ENVIRONMENTAL PROTECTION. Rock from excavations meeting the stone quality and gradation requirements of riprap or grouted stone as specified in SECTION: STONE PROTECTION may be stockpiled for subsequent use. All unsatisfactory material shall be removed from the site. No excavated material shall be disposed of to obstruct the flow of any stream, endanger a partly finished structure, impair the efficiency or appearance of any structure, or be detrimental to the completed work in any way.

## PART 2 PRODUCTS

### 2.1 COMPACTED FILL

Material for Compacted Fill shall be obtained from required excavation. The materials shall have a gradation such that not less than 15 percent, and not more than 50 percent by weight based on the minus 3-inch gradation, shall pass a No. 200 sieve. The materials shall be processed to remove stones larger than 6 inches. The material shall be reasonably well graded between 3 inches and the no. 200 sieve.

## 2.2 PERVIOUS BACKFILL

Pervious Backfill Material shall be placed behind retaining walls, head walls or flood walls as shown on the plans and in accordance with the following requirements. Pervious Backfill Material shall consist of gravel, crushed gravel, crushed rock, natural sand, processed sand or combinations thereof and shall conform to the following requirements:

Sieve Size	Percent Passing
3/4 inch	100
3/8 inch	80 to 100
No. 100	0 to 8
No. 200	0 to 3

## 2.3 MISCELLANEOUS FILL

Material for miscellaneous fill may consist of any or all types of satisfactory material available from the required excavation. Material shall be placed in the areas indicated on the drawings or as otherwise directed. Miscellaneous fill shall be dumped and spread in horizontal layers not to exceed 24 inches thick. Where used above grade to bury riprap, miscellaneous fill be spread parallel to the slope to the indicated thickness. Compaction other than that obtained by controlled movement of hauling and spreading equipment over the area will not be required.

# PART 3 EXECUTION

## 3.1 EXCAVATION, GENERAL

Excavation shall consist of the removal of every type of material encountered in the designated areas or from areas directed. The material to be removed may include but is not limited to silt, sand, gravel, cobbles and boulders, granitic bedrock, concrete, asphalt, vegetation, trash, and other debris. Excavation will occur in active streambed; groundwater will be encountered. Slope lines indicated on the drawings for temporary cuts do not necessarily represent the actual slopes to which the excavation must be made to safely perform the work. Unforeseen conditions may dictate that the temporary cut slope shall be made to the actual slope to which the work can be safely performed. Measurement and payment for excavation will be made in accordance with Section 01270. Excavation for permanent cuts shall be made to the slope lines indicated. Excavation of granitic bedrock will be required downstream of Station 39+00. A report by others, available for review in the Los Angeles District office through the Contracting Officer, discusses a seismic refraction survey conducted downstream of the project

site. That report indicates that bedrock seismic velocities ranged between 5,500 and 21,000 feet per second. Where excavation is in the granitic bedrock, a tolerance of plus 1 to minus 12 inches from the indicated slope lines and grades will be allowed in the finished surface.

### 3.2 EXCAVATION AND OPERATION OVER MWD PIPES

Two encased Metropolitan Water District pipelines exist as shown on the drawings. The pipelines are adequate for AASHTO H-20 loading, provided the minimum cover over the pipelines is four feet. Where the cover over the pipes or encasement is a minimum of five feet, vehicles imposing loads no greater than those imposed by a loaded Caterpillar 657E scraper may operate, provided the ground is maintained in a smooth condition with a uniform slope for three vehicle lengths on both sides of the pipes. The Metropolitan Water District will require approval of all equipment and procedures to be used over their pipes. The information must be submitted to the Metropolitan Water District for their written approval a minimum of thirty days prior work. No power equipment, including backhoes, shall be used when potholing or excavating within 24 inches of the MWD pipes.

### 3.3 Excavation Plan

Fourteen (14) days prior to commencing excavation, the Contractor shall submit his plan for excavation to the Contracting Officer for acceptance. The plan must show all proposed locations of excavation operations and all methods to be utilized. The plan must include the procedure and location for disposal of unused satisfactory material. The excavation plan shall be updated and resubmitted to the Contracting Officer any time the Contractor proposes altering his methods. The Contractor's methods for excavation are solely his responsibility. Approval of the excavation plan by the Contracting Officer will in no way limit the Contractor's liability regarding property damaged by this operations, nor will it alter the Contractor's sole responsibility for the safety of his operations. The Contractor shall be responsible for all damage caused by his excavation operations and be responsible for answering all complaints. The Contractor shall provide the Contracting Officer with 30 days advance warning of the use of excavation techniques which may lead to property damage to allow for review of the proposed techniques, to confirm general compliance with these specifications, and to allow monitoring of the excavations methods.

### 3.4 GENERAL EXCAVATION

The Contractor shall perform excavation of every type of material encountered within the limits of the project to the lines, grades, and elevations indicated and as specified. Grading shall be in conformity with the typical sections shown and the tolerances specified in paragraph FINISHING. Material for Compacted Fill shall be transported to and placed in fill or embankment within the limits of the work. Unsatisfactory materials encountered within the limits of the work shall be excavated below grade and replaced with satisfactory materials as directed. During construction, excavation and fill shall be performed in a manner and sequence that will provide proper drainage at all times.

#### 3.4.1 Drainage Structures

Excavations shall be made to the lines, grades, and elevations shown, or as directed. Trenches and foundation pits shall be of sufficient size to permit the placement and removal of forms for the full length and width of structure footings and foundations as shown. Rock or other hard foundation material shall be cleaned of loose debris and cut to a firm, level, stepped, or serrated surface. Loose disintegrated rock and thin strata shall be removed. When concrete or masonry is to be placed in an excavated area, the bottom of the excavation shall not be disturbed.

### 3.5 OPENING AND DRAINAGE OF EXCAVATION

The Contractor shall notify the Contracting Officer sufficiently in advance of the opening of any excavation or borrow pit to permit elevations and measurements of the undisturbed ground surface to be taken. Except as otherwise permitted, excavation areas shall be excavated providing adequate drainage. Overburden and other spoil material shall be transported to designated spoil areas or otherwise disposed of as directed. The Contractor shall ensure that excavation of any area, or dumping of spoil material results in minimum detrimental effects on natural environmental conditions.

### 3.6 EXCAVATION, BLASTING

Any method used to excavate the channel using explosives shall be subject to the approval by the Contracting Officer.

#### 3.6.1 General Requirements

The drilling and blasting program and methods shall be the minimum necessary to break up the rock into bulldozer-manageable sized pieces for removal. Only the minimum strength explosive that will accomplish the fracturing will be allowed. If multiple charges are deemed necessary, they will be sequenced to produce good breakage of the rock and reduce airblast (sonic impacts) and ground vibrations to minimal levels. The Contractor shall strictly comply with all Federal, State and local regulations regarding construction blasting (Engineer Manual (EM) 1110-2-3800, including all notice and reporting requirements). Under no circumstances shall blasting be performed within 100 feet of concrete that has been placed less than seven days. Blasting within 100 feet of concrete older than seven days will be permitted only if approved by the Contracting Officer.

#### 3.6.2 Blasting

Prior to drilling for each blast, the Contractor shall submit a Pre-Blast data report plan on an approved form, which includes the pertinent data on the location by station, ground surface elevation in the area of the blast; diameter, spacing, depth, overdepth, pattern and inclination of blast holes; the type, strength, amount, distribution and powder factor for the explosives used per hole and per blast; the sequence and pattern of delays, and description and purpose of special methods. The loading of holes shall be done in the presence of a Government inspector. Acceptance by the Contracting Officer of the Pre-Blast data report plan will not relieve the

Contractor of his sole responsibility to produce satisfactory results as set forth in these specifications. Drilling and blasting shall be done only to the depth, amount, and at such locations, with explosives of such quantity, distribution and density that will not produce unsafe or damaged rock or damage beyond the prescribed excavation limits. When a drilling and blasting program results in damage to the excavation, or to natural or man-made features, or is injurious to wildlife and habitat, the Contractor will be required to devise and employ methods which will prevent such damage. The revision may include special methods such as presplit and zone blasting, shallow lifts, reduction in size of individual blasts, small diameter blast holes, closely spaced blast holes, reduction of explosives, greater distribution of explosives by use of decking and primacord or variation in density of explosives.

#### 3.6.2.1 Blasting Nearby Structures and Utility Lines

Blasting will not be permitted within 50 feet of the existing structures, including the Metropolitan Water District pipes. Contractor shall use other rock excavation techniques, and deploy all means necessary to break-out and remove layers of bedrock nearby the structures and utility lines. Contractor shall coordinate with utility owners prior to excavation and blasting in the vicinity of utility lines.

#### 3.6.3 Overshooting

The Contractor shall use controlled blasting techniques so as not to overshoot. All possible care shall be exercised in drilling and blasting operations to prevent formation of discontinuities and to minimize over-break and blast damage of adjacent unexcavated ground and structures. Any material outside the authorized limits or below the bottom limits which may be shattered or loosened because of blasting shall be removed and backfilled with concrete by the Contractor at his expense. The Contractor shall discontinue any method of blasting which leads to overshooting or is dangerous to the public, destructive of natural or man-made features, or is injurious to wildlife and habitat.

#### 3.6.4 Pre-excavation Survey

The Contractor shall perform a pre-excavation survey which shall include as a minimum; detailed examination of adjacent structures, including video taping and installation of crack monitoring tape along existing structural cracks. Also included shall be a seismic survey performed by a certified seismic survey firm to determine limiting charge weights, distances to structures, etc. for all areas where blasting is proposed and limiting ball weights, height of drop, etc., for all areas where headache balls and/or hoe ram techniques are proposed.

##### 3.6.4.1 Vibration Monitoring

During construction, the Contractor shall hire a certified seismic survey firm to perform a seismic monitoring program to determine the effects of any blasting, headache ball or hoe ram use, or any other specialized excavation technique. Particle velocities measured at an existing structure, including the Metropolitan Water District pipes, or 1,000 feet

from the blasting, which ever is closest, shall not exceed statutory limits or 0.5 inches per second (whether the result of blasting or other excavation technique). In addition to these requirements, the Contractor shall provide suitable vibration monitoring equipment to measure and record ground motions at the 200 feet distance.

#### 3.6.5 Notifications

The Contractor shall notify each property owner and public utility company having structures or facilities in proximity to the site of the work of his intention to use explosives. Such notice shall be given sufficiently in advance to enable the companies to take such steps as they may deem necessary to protect their property from injury. Any blasting adjacent to or crossing existing utilities shall be fully coordinated with the owner of the effected utility to include hole spacing, loading and vibration.

#### 3.6.6 Qualifications

During blasting operations, the Contractor shall have on site, and in immediate charge of the blasting, a licensed blaster acceptable to the Contracting Officer who has had no less than 3 years of experience in controlled blasting and rock excavation operations. Powder handlers shall have had no less than one year continuous experience in preparation and loading of powder charges.

#### 3.6.7 Post-Blast Data Reports

In addition to the reporting requirements required above, a separate Post-Blast Data Report of each blast shall be prepared and furnished to the Contracting Officer on an approved form. The report shall indicate the location of the blast by specific stationing, ground surface elevation, depth of round, pounds of explosives used by type and grade, total number of loaded holes, total pounds per delay, quantity and kind of explosive in each hole, maximum measured blast vibration, and all other blast information directed by the Contracting Officer. Original or legible copies of the report shall be provided to the Contracting Officer within 24 hours of the blast event.

#### 3.6.8 Explosives

##### 3.6.8.1 Safety

The contractor shall fully comply with Section 29, Blasting, EM 385-1-1 and any Local or State Laws and Regulations applicable to the proposed Blasting Plan.

##### 3.6.8.2 Storage

The Contractor shall submit to the Contracting Officer, for approval, drawings showing the explosive storage location, access to and type of construction of the proposed storage magazine for explosives, and cap house. The explosives storage magazine and other facilities may be located on project lands if a satisfactory location can be found and is approved by the Contracting Officer. The Contractor shall maintain the explosive



storage area at his own expense. The explosives storage magazine shall be securely locked when not in use.

### 3.7 BACKFILL

Fill material shall not be placed against concrete which has not been in place at least 14 days or until the concrete has attained a strength of 3,000 psi when tested in accordance with the Section 03307 CONCRETE FOR MINOR STRUCTURES. Heavy equipment shall not be operated over pipes and buried structures until at least 24 inches of fill material have been placed and compacted over them. Material from the top of the pipe or buried structure to 24 inches above pipe or buried structure shall be compacted by mechanical tampers or other equipment approved by the Contracting Officer. Material containing stones shall be placed in a manner to prevent the stones from striking the concrete structures and to prevent the formation of voids. Backfill adjacent to any and all types of structures shall be placed and compacted to at least 90 percent laboratory maximum density. Ground surface on which backfill is to be placed shall be prepared as specified in paragraph PREPARATION OF GROUND SURFACE FOR EMBANKMENTS. Compaction requirements for backfill materials shall also conform to the applicable portions of paragraphs PREPARATION OF GROUND SURFACE FOR EMBANKMENTS, EMBANKMENTS, and SUBGRADE PREPARATION. Compaction shall be accomplished by sheepsfoot rollers, pneumatic-tired rollers, steel-wheeled rollers, vibratory compactors, or other approved equipment.

### 3.8 PREPARATION OF GROUND SURFACE FOR EMBANKMENTS

Ground surface on which fill is to be placed shall be stripped of live, dead, or decayed vegetation, rubbish, debris, and other unsatisfactory material; plowed, disked, or otherwise broken up to a depth of 12 inches; pulverized; moistened or aerated as necessary; thoroughly mixed; and compacted to at least 90 percent laboratory maximum density. Compaction shall be accomplished by sheepsfoot rollers, pneumatic-tired rollers, steel-wheeled rollers, vibratory compactors, or other approved equipment. The prepared ground surface shall be scarified and moistened or aerated as required just prior to placement of embankment materials to assure adequate bond between embankment material and the prepared ground surface.

### 3.9 EMBANKMENTS

Earth embankments shall be constructed from Compacted Fill. The material shall be placed in successive horizontal layers of loose material not more than 12 inches in depth, except that when mechanical tampers are used the thickness of the loose layers shall not exceed 4 inches. Each layer shall be spread uniformly on a soil surface that has been moistened or aerated as necessary, and scarified or otherwise broken up so that the fill will bond with the surface on which it is placed. After spreading, each layer shall be plowed, disked, or otherwise broken up; moistened or aerated as necessary; thoroughly mixed; and compacted to at least 90 percent laboratory maximum density. Compaction requirements for the upper portion of earth embankments forming subgrade for pavements shall be identical with those requirements specified in paragraph SUBGRADE PREPARATION. Compaction shall be accomplished by sheepsfoot rollers, pneumatic-tired rollers, steel-wheeled rollers, vibratory compactors, or other approved equipment.

### 3.10 SUBGRADE PREPARATION

#### 3.10.1 Construction

Subgrade shall be shaped to line, grade, and cross section, and compacted as specified. This operation shall include plowing, discing, and any moistening or aerating required to obtain specified compaction. Soft or otherwise unsatisfactory material shall be removed and replaced with satisfactory excavated material or other approved material as directed. Rock encountered in the cut section shall be excavated to a depth of 6 inches below finished grade for the subgrade. Low areas resulting from removal of unsatisfactory material or excavation of rock shall be brought up to required grade with Compacted Fill, and the entire subgrade shall be shaped to line, grade, and cross section and compacted as specified. The elevation of the finish subgrade shall not vary more than 1 inch from the established grade and cross section.

#### 3.10.2 Compaction

Compaction shall be accomplished by sheepsfoot rollers, pneumatic-tired rollers, steel-wheeled rollers, vibratory compactors, or other approved equipment.

##### 3.10.2.1 Subgrade for Pavements

Subgrade for pavements shall be compacted to at least 95 percent laboratory maximum density for the depth below the surface of the pavement shown. When more than one soil classification is present in the subgrade, the top 6 inches of subgrade shall be scarified, windrowed, thoroughly blended, reshaped, and compacted. Where riprap is to be placed, no compaction will be required in cut areas within 25 feet of centerline of each of the Metropolitan Water District pipes. Soft or otherwise unsatisfactory material shall be replaced with bedding material.

### 3.11 FINISHING

The surface of excavations, embankments, and subgrades shall be finished to a smooth and compact surface in accordance with the lines, grades, and cross sections or elevations shown. The degree of finish for graded areas shall be within 1 inch of the grades and elevations indicated except that the degree of finish for subgrades shall be specified in paragraph SUBGRADE PREPARATION. Gutters and ditches shall be finished in a manner that will result in effective drainage. The surface of areas to be planted or landscaped shall be finished to a smoothness suitable for the application of the materials.

### 3.12 TESTING

Testing shall be performed by an approved commercial testing laboratory or by the Contractor subject to approval. If the Contractor elects to establish testing facilities, no work requiring testing will be permitted until the Contractor's facilities have been inspected and approved by the Contracting Officer. Field in-place density shall be determined in

accordance with ASTM D 1556, and ASTM D 2922. When ASTM D 2922 is used, the calibration curves shall be checked and adjusted using only the sand cone method as described in ASTM D 1556. ASTM D 2922 results in a wet unit weight of soil and when using this method ASTM D 3017 shall be used to determine the moisture content of the soil. The calibration curves furnished with the moisture gauges shall also be checked along with density calibration checks as described in ASTM D 3017; the calibration checks of both the density and moisture gauges shall be made at the beginning of a job on each different type of material encountered and at intervals as directed by the Contracting Officer. When test results indicate, as determined by the Contracting Officer, that compaction is not as specified, the material shall be removed, replaced and recompacted to meet specification requirements. Tests on recompacted areas shall be performed to determine conformance with specification requirements. Inspections and test results shall be certified by a registered professional civil engineer. These certifications shall state that the tests and observations were performed by or under the direct supervision of the engineer and that the results are representative of the materials or conditions being certified by the tests. The following number of tests, if performed at the appropriate time, will be the minimum acceptable for each type operation.

#### 3.12.1 Compacted Fill and Backfill Material Gradation

One test per 1000 cubic yards stockpiled or in-place source material. Gradation of fill and backfill material shall be determined in accordance with ASTM D 422 and ASTM D 1140.

#### 3.12.2 In-Place Densities

- a. One test per 1000 cubic yards, or fraction thereof, of each lift of fill or backfill areas compacted by other than hand-operated machines.
- b. One test per 500 square feet, or fraction thereof, of each lift of fill or backfill areas compacted by hand-operated machines.

#### 3.12.3 Check Tests on In-Place Densities

If ASTM D 2922 is used, in-place densities shall be checked by ASTM D 1556 as follows:

- a. One check test per lift for each 5000 cubic yards, or fraction thereof, of each lift of fill or backfill compacted by other than hand-operated machines.
- b. One check test per lift for each 5000 square feet, of fill or backfill areas compacted by hand-operated machines.

#### 3.12.4 Moisture Contents

In the stockpile, excavation, or borrow areas, a minimum of two tests per day per type of material or source of material being placed during stable weather conditions shall be performed. During unstable weather, tests shall be made as dictated by local conditions and approved by the

Contracting Officer.

#### 3.12.5 Optimum Moisture and Laboratory Maximum Density

Tests shall be made for each type material or source of material to determine the optimum moisture and laboratory maximum density values. One representative test per 5000 cubic yards of fill and backfill, or when any change in material occurs which may affect the optimum moisture content or laboratory maximum density.

#### 3.12.6 Tolerance Tests for Subgrades

Continuous checks on the degree of finish specified in paragraph SUBGRADE PREPARATION shall be made during construction of the subgrades.

#### 3.13 SUBGRADE AND EMBANKMENT PROTECTION

During construction, embankments and excavations shall be kept shaped and drained. Ditches and drains along subgrade shall be maintained to drain effectively at all times. The finished subgrade shall not be disturbed by traffic or other operation and shall be protected and maintained by the Contractor in a satisfactory condition until ballast, subbase, base, or pavement is placed. The storage or stockpiling of materials on the finished subgrade will not be permitted. No subbase, base course, ballast, or pavement shall be laid until the subgrade has been checked and approved, and in no case shall subbase, base, surfacing, pavement, or ballast be placed on a muddy, spongy, or frozen subgrade.

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## SECTION 02316

## EXCAVATION, TRENCHING, AND BACKFILLING FOR UTILITIES SYSTEMS

## PART 1 GENERAL

## 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

## ASTM INTERNATIONAL (ASTM)

ASTM D 1556	(2000) Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D 1557	(2000) Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/cu. ft. (2,700 kN-m/cu.m.))
ASTM D 2487	(2000) Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D 2922	(2001) Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
ASTM D 3017	(2001) Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)

## 1.2 DEGREE OF COMPACTION

Degree of compaction shall be expressed as a percentage of the maximum density obtained by the test procedure presented in ASTM D 1557.

## 1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The "RE" designates that the Resident Office will review the submittal for the Government. Submit the following in accordance with Section 01330, SUBMITTAL PROCEDURES:

SD-06 Test Reports

Field Density Tests.

Testing of Backfill Materials.

Copies of all laboratory and field test reports within 24 hours of the completion of the test.

## PART 2 PRODUCTS

### 2.1 MATERIALS

#### 2.1.1 Satisfactory Materials

Satisfactory materials shall comprise any materials classified by ASTM D 2487 as ML, CL, GW, GP, GM, GP-GM, GW-GM, GC, GP-GC, GM-GC, SC, SM, SW, SP.

#### 2.1.2 Unsatisfactory Materials

Materials which do not comply with the requirements for satisfactory materials are unsatisfactory. Unsatisfactory materials include but are not limited to soils classified by ASTM D 2487 as Pt, OH, OL, CH and MH; stones greater than 8 inches; concrete or asphalt debris; manmade fills; trash; refuse; backfills from previous construction, and materials too wet to be used in the work. Unsatisfactory material also includes material classified as satisfactory which contains root and other organic matter, frozen material, and stones larger than 3 inches and contaminated materials. The Contracting Officer shall be notified of any contaminated materials.

#### 2.1.3 Unstable Material

Unstable material shall consist of materials too wet to properly support the utility pipe, conduit, or appurtenant structure.

#### 2.1.4 Select Granular Material

Select granular material shall consist of well-graded sand, gravel, crushed gravel, crushed stone composed of hard, tough and durable particles, and shall contain not more than 10 percent by weight of material passing a No. 200 mesh sieve and no less than 95 percent by weight passing the 1 inch sieve. The maximum allowable aggregate size shall be 1 inch, or the maximum size recommended by the pipe manufacturer, whichever is smaller.

#### 2.1.5 Initial Backfill Material

Initial backfill shall consist of select granular material or satisfactory materials free from rocks 1 inch, or larger in any dimension or free from rocks of such size as recommended by the pipe manufacturer, whichever is smaller.

## PART 3 EXECUTION

### 3.1 EXCAVATION

Excavation shall be performed to the lines and grades indicated. During excavation, material satisfactory for backfilling shall be stockpiled in an orderly manner at a distance from the banks of the trench equal to 1/2 the

depth of the excavation, but in no instance closer than 24 inches. Excavated material not required or not satisfactory for backfill shall be removed from the site. Grading shall be done as may be necessary to prevent surface water from flowing into the excavation, and any water accumulating shall be removed to maintain the stability of the bottom and sides of the excavation. Unauthorized overexcavation shall be backfilled in accordance with paragraph BACKFILLING AND COMPACTION at no additional cost to the Government.

#### 3.1.1 Trench Excavation Requirements

The trench shall be excavated as recommended by the manufacturer of the pipe to be installed. Trench walls below the top of the pipe shall be sloped, or made vertical, and of such width as recommended in the manufacturer's installation manual. Where no manufacturer's installation manual is available, trench walls shall be made vertical. Trench walls more than 5 feet high shall be shored, cut back to a stable slope, or provided with equivalent means of protection for employees who may be exposed to moving ground or cave in. Trench walls which are cut back shall be excavated to at least the angle of repose of the soil. Special attention shall be given to slopes which may be adversely affected by weather or moisture content. The trench width below the top of pipe shall not exceed 24 inches plus pipe outside diameter (O.D.) for pipes of less than 24 inches inside diameter and shall not exceed 36 inches plus pipe outside diameter for sizes larger than 24 inches inside diameter. Where recommended trench widths are exceeded, redesign, stronger pipe, or special installation procedures shall be utilized by the Contractor. The cost of redesign, stronger pipe, or special installation procedures shall be borne by the Contractor without any additional cost to the Government.

##### 3.1.1.1 Bottom Preparation

The bottoms of trenches shall be accurately graded to provide uniform bearing and support for the bottom quadrant of each section of the pipe. Bell holes shall be excavated to the necessary size at each joint or coupling to eliminate point bearing. Stones of 1 inch or greater in any dimension, or as recommended by the pipe manufacturer, whichever is smaller, shall be removed to avoid point bearing.

##### 3.1.1.2 Removal of Unyielding Material

Where overdepth is not indicated and unyielding material is encountered in the bottom of the trench, such material shall be removed 4 inches below the required grade and replaced with suitable materials as provided in paragraph BACKFILLING AND COMPACTION.

##### 3.1.1.3 Removal of Unstable Material

Where unstable material is encountered in the bottom of the trench, such material shall be removed to the depth directed and replaced to the proper grade with select granular material as provided in paragraph BACKFILLING AND COMPACTION. When removal of unstable material is required due to the Contractor's fault or neglect in performing the work, the resulting material shall be excavated and replaced by the Contractor without



additional cost to the Government.

#### 3.1.1.4 Excavation for Appurtenances

Excavation for manholes, catch-basins, inlets, or similar structures shall be of sufficient size to permit the placement and removal of forms for the full length and width of structure footings and foundations as shown. Rock shall be cleaned of loose debris and cut to a firm surface either level, stepped, or serrated, as shown or as directed. Loose disintegrated rock and thin strata shall be removed. Removal of unstable material shall be as specified above. When concrete is to be placed in an excavated area, special care shall be taken not to disturb the bottom of the excavation. Excavation to the final grade level shall not be made until just before the concrete is to be placed.

#### 3.1.2 Stockpiles

Stockpiles of satisfactory materials shall be placed and graded as specified. Stockpiles shall be kept in a neat and well drained condition, giving due consideration to drainage at all times. The ground surface at stockpile locations shall be cleared, grubbed, and sealed by rubber-tired equipment, excavated satisfactory and unsatisfactory materials shall be separately stockpiled. Stockpiles of satisfactory materials shall be protected from contamination which may destroy the quality and fitness of the stockpiled material. If the Contractor fails to protect the stockpiles, and any material becomes unsatisfactory, such material shall be removed and replaced with satisfactory material from approved sources at no additional cost to the Government. Locations of stockpiles of satisfactory materials shall be subject to prior approval of the Contracting Officer.

### 3.2 BACKFILLING AND COMPACTION

Backfill material shall consist of satisfactory material, select granular material, or initial backfill material as required. Backfill shall be placed in layers not exceeding 6 inches loose thickness for compaction by hand operated machine compactors, and 8 inches loose thickness for other than hand operated machines, unless otherwise specified. Each layer shall be compacted to at least 95 percent maximum density.

#### 3.2.1 Trench Backfill

Trenches shall be backfilled to existing grade.

##### 3.2.1.1 Replacement of Unyielding Material

Unyielding material removed from the bottom of the trench shall be replaced with select granular material or initial backfill material.

##### 3.2.1.2 Replacement of Unstable Material

Unstable material removed from the bottom of the trench or excavation shall be replaced with select granular material placed in layers not exceeding 6 inches loose thickness.

### 3.2.1.3 Bedding and Initial Backfill

Bedding shall be of the type and thickness shown. Initial backfill material shall be placed and compacted with approved tampers to a height of at least one foot above the utility pipe or conduit. The backfill shall be brought up evenly on both sides of the pipe for the full length of the pipe. Care shall be taken to ensure thorough compaction of the fill under the haunches of the pipe.

### 3.2.1.4 Final Backfill

The remainder of the trench, except for special materials for roadways, shall be filled with satisfactory material. Backfill material shall be placed and compacted to 95 percent maximum density. Water flooding or jetting methods of compaction will not be permitted.

### 3.2.2 Backfill for Appurtenances

After the manhole, catchbasin, inlet, or similar structure has been constructed and the concrete has been allowed to cure for 7 days, backfill shall be placed in such a manner that the structure will not be damaged by the shock of falling earth. The backfill material shall be deposited and compacted as specified for final backfill, and shall be brought up evenly on all sides of the structure to prevent eccentric loading and excessive stress.

## 3.3 TESTING

Testing shall be the responsibility of the Contractor and shall be performed at no additional cost to the Government.

### 3.3.1 Testing Facilities

Tests shall be performed by an approved commercial testing laboratory or may be tested by facilities furnished by the Contractor. No work requiring testing will be permitted until the facilities have been inspected and approved by the Contracting Officer.

### 3.3.2 Testing of Backfill Materials

Classification of backfill materials shall be determined in accordance with ASTM D 2487 and the moisture-density relations of soils shall be determined in accordance with ASTM D 1557. A minimum of one soil classification and one moisture-density relation test shall be performed on each different type of material used for bedding and backfill.

### 3.3.3 Field Density Tests

Tests shall be performed in sufficient numbers to ensure that the specified density is being obtained. A minimum of one field density test per lift of backfill for every 200 feet of installation shall be performed. One moisture density relationship shall be determined for every 2,000 cubic yards of material used. Field in-place density shall be determined in accordance with ASTM D 1556 or ASTM D 2922. When ASTM D 2922 is used, the

calibration curves shall be checked and adjusted using the sand cone method as described in paragraph Calibration of the ASTM publication. ASTM D 2922 results in a wet unit weight of soil and when using this method, ASTM D 3017 shall be used to determine the moisture content of the soil. The calibration curves furnished with the moisture gauges shall be checked along with density calibration checks as described in ASTM D 3017. The calibration checks of both the density and moisture gauges shall be made at the beginning of a job, on each different type of material encountered, at intervals as directed by the Contracting Officer. Copies of calibration curves, results of calibration tests, and field and laboratory density tests shall be furnished to the Contracting Officer. Trenches improperly compacted shall be reopened to the depth directed, then refilled and compacted to the density specified at no additional cost to the Government.

-- End of Section --

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## SECTION 02378

## GEOTEXTILES USED AS FILTERS

## PART 1 GENERAL

## 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

## ASTM INTERNATIONAL (ASTM)

ASTM D 123	(2000b) Textiles
ASTM D 4354	(1999) Sampling of Geosynthetics for Testing
ASTM D 4355	(1999) Deterioration of Geotextiles from Exposure to Ultraviolet Light and Water (Xenon-Arc Type Apparatus)
ASTM D 4491	(1999a) Water Permeability of Geotextiles by Permittivity
ASTM D 4533	(1991; R 1996) Trapezoid Tearing Strength of Geotextiles
ASTM D 4632	(1991; R 1996) Grab Breaking Load and Elongation of Geotextiles
ASTM D 4751	(1999a) Determining Apparent Opening Size of a Geotextile
ASTM D 4833	(2000) Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products
ASTM D 4873	(2001) Identification, Storage, and Handling of Geosynthetic Rolls and Samples
ASTM D 4884	(1996) Strength of Sewn or Thermally Bonded Seams of Geotextiles

## 1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When

used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The "RE" designates that the Resident Office will review the submittal for the Government. Submit the following in accordance with Section 01330, SUBMITTAL PROCEDURES:

#### SD-04 Samples

##### Geotextile Sample.

If requested, submit geotextile samples for testing to determine compliance with the requirements in this specification. When required, submit samples a minimum of 30 days prior to the beginning of installation of the same textile. Upon delivery of the geotextile, submit duplicate copies of the written certificate of compliance signed by a legally authorized official of the manufacturer. The certificate shall state that the geotextile shipped to the site meets the chemical requirements and exceeds the minimum average roll value listed in TABLE 1, MINIMUM PHYSICAL REQUIREMENTS FOR DRAINAGE GEOTEXTILE. Upon request, supply quality control and quality assurance tests for the geotextile. All samples provided shall be from the same production lot as will be supplied for the contract, and shall be the full manufactured width of the geotextile by at least 10 feet long. Samples submitted for testing shall be identified by manufacturers lot designation. For needle punched geotextile, the manufacturer shall certify that the geotextile has been inspected using permanent on-line metal detectors and does not contain any needles.

#### SD-07 Certificates

##### Geotextile Material

Submit the manufacturer's certification of the geotextile material.

### 1.3 SHIPMENT, HANDLING, AND STORAGE

#### 1.3.1 Shipment and Storage

Only approved geotextile rolls shall be delivered to the project site. All geotextile shall be labeled, shipped, stored, and handled in accordance with ASTM D 4873. No hooks, tongs, or other sharp instruments shall be used for handling geotextile.

## PART 2 PRODUCTS

### 2.1 MATERIALS

#### 2.1.1 Geotextile Material

##### 2.1.1.1 General

The geotextile shall be a non-woven pervious sheet of plastic yarn as defined by ASTM D 123. The geotextile shall equal or exceed the minimum

average roll values listed in TABLE 1, MINIMUM PHYSICAL REQUIREMENTS FOR DRAINAGE GEOTEXTILE. The Contractor shall submit the geotextile sample to the Government. Strength values indicated in the table are for the weaker principal direction.

TABLE 1  
MINIMUM PHYSICAL REQUIREMENTS FOR DRAINAGE GEOTEXTILE

PROPERTY	UNITS	ACCEPTABLE VALUES	TEST METHOD
GRAB STRENGTH	lb	115	ASTM D 4632
PUNCTURE	lb	40	ASTM D 4833
TRAPEZOID TEAR	lb	40	ASTM D 4533
APPARENT OPENING SIZE	U.S. SIEVE	#16	ASTM D 4751
PERMITTIVITY	sec -1	0.7	ASTM D 4491
ULTRAVIOLET DEGRADATION	Percent	50 at 500 Hrs	ASTM D 4355

#### 2.1.1.2 Geotextile Fiber

Fibers used in the manufacturing of the geotextile shall consist of a long-chain synthetic polymer composed of at least 85 percent by weight of polyolefins, polyesters, or polyamides. Stabilizers and/or inhibitors shall be added to the base polymer if necessary to make the filaments resistant to deterioration caused by ultraviolet light and heat exposure. Reclaimed or recycled fibers or polymer shall not be added to the formulation. Geotextile shall be formed into a network such that the filaments or yarns retain dimensional stability relative to each other, including the edges. The edges of the geotextile shall be finished to prevent the outer fiber from pulling away from the geotextile.

#### 2.1.2 Securing Pins

The geotextile shall be secured to the embankment or foundation soil by pins to prevent movement prior to placement of revetment materials. Other appropriate means to prevent movement such as staples, sand bags, and stone could also be used. Securing pins shall be inserted through both strips of overlapped geotextile along the line passing through midpoints of the overlap. Securing pins shall be removed as placement of revetment materials are placed to prevent tearing of geotextile or enlarging holes maximum spacing between securing pins depends on the steepness of the embankment slope. The maximum pins spacing shall be equal to or less than the values listed in TABLE 2, MAXIMUM SPACING FOR SECURING PINS. When windy conditions prevail at the construction site, the number of pins should be increased upon the demand of the Contracting Officer. Terminal ends of the geotextile shall be anchored with key trench or apron at crest,



toe of the slope and upstream and downstream limits of installation.

TABLE 2  
MAXIMUM SPACING FOR SECURING PINS

EMBANKMENT	SPACING, feet
STEEPER THAN 1V ON 3H	2
1V ON 3H TO 1V ON 4H	3
FLATTER THAN 1V ON 4H	5

## 2.2 INSPECTIONS, VERIFICATIONS, AND TESTING

### 2.2.1 Manufacturing and Sampling

Geotextiles and factory seams shall meet the requirements specified in TABLE 1, MINIMUM PHYSICAL REQUIREMENTS FOR DRAINAGE GEOTEXTILE. Conformance testing shall be performed in accordance with the manufacturers approved quality control manual. Sampling for testing shall be in accordance with ASTM D 4354.

## PART 3 EXECUTION

### 3.1 SURFACE PREPARATION

Surface on which the geotextile will be placed shall be prepared to a relatively smooth surface condition, in accordance with the applicable portion of this specification and shall be free from obstruction, debris, depressions, erosion feature, or vegetation. Any irregularities will be removed so as to insure continuous, intimate contact of the geotextile with all the surface. Any loose material, soft or low density pockets of material, will be removed; erosion features such as rills, gullies etc. must be graded out of the surface before geotextile placement.

### 3.2 INSTALLATION OF THE GEOTEXTILE

#### 3.2.1 General

The geotextile shall be placed in the manner and at the locations shown. At the time of installation, the geotextile shall be rejected if it has defects, rips, holes, flaws, deterioration or damage incurred during manufacture, transportation or storage.

#### 3.2.2 Placement

The geotextile shall be placed with the long dimension parallel to the and laid smooth and free of tension, stress, folds, wrinkles, or creases. The strips shall be placed to provide a minimum width of 15 inches of overlap for each joint. Temporary pinning of the geotextile to help hold it in place until the bedding layer is placed shall be allowed. The temporary

pins shall be removed as the bedding is placed to relieve high tensile stress which may occur during placement of material on the geotextile. Trimming shall be performed in such a manner that the geotextile shall not be damaged in any way.

### 3.3 PROTECTION

The geotextile shall be protected at all times during construction from contamination by surface runoff and any geotextile so contaminated shall be removed and replaced with uncontaminated geotextile. Any damage to the geotextile during its installation or during placement of bedding materials shall be replaced by the Contractor at no cost to the Government. The work shall be scheduled so that the covering of the geotextile with a layer of the specified material is accomplished within 7 calendar days after placement of the geotextile. Failure to comply shall require replacement of geotextile. The geotextile shall be protected from damage prior to and during the placement of riprap or other materials. Before placement of riprap or other materials, the Contractor shall demonstrate that the placement technique will not cause damage to the geotextile. In no case shall any type of equipment be allowed on the unprotected geotextile.

### 3.4 PLACEMENT OF CUSHIONING MATERIAL

Placing of cushioning material shall be performed in a manner to insure intimate contact of the geotextile with the prepared surface and with the cushioning material. The placement shall also be performed in a manner that shall not damage the geotextile including tear, puncture, or abrasion. On sloping surfaces the cushioning material shall be placed from the bottom of the slopes upward. During placement, the height of the drop of riprap material shall not be greater than 12 inches. Any geotextile damaged beneath the cushioning material shall be uncovered as necessary and replaced at no cost to the Government.

### 3.5 OVERLAPPING AND SEAMING

#### 3.5.1 Overlapping

The overlap of geotextile rolls shall be 15 inches. Appropriate measures will be taken to insure required overlap exists after cushion placement.

#### 3.5.2 Sewn Seams

High strength thread should be used such that seam test should conform to ASTM D 4884. The thread shall meet the chemical, ultraviolet, and physical requirements of the geotextile, and the color shall be different from that of the geotextile. The seam strength shall be equal to the strength required for the geotextile in the direction across the seam. Overlapping J-type seams are preferable over prayer-type seams as the overlapping geotextile reduces the chance of openings to occur at the seam. Double sewing shall be used specially for field seams to provide a safety factor against undetected missed stitches.

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## SECTION 02551

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## SECTION 02551

## BITUMINOUS PAVING FOR ROADS, STREETS AND OPEN STORAGE AREAS

## PART 1 GENERAL

## 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

## ASTM INTERNATIONAL (ASTM)

ASTM C 88	(1999a) Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
ASTM C 117	(1995) Materials Finer Than 75 micrometer (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C 127	(2001) Density, Relative Density (Specific Gravity), and Absorption of Coarse Aggregate
ASTM C 128	(2001) Density, Relative Density (Specific Gravity), and Absorption of Fine Aggregate
ASTM C 131	(2001) Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C 136	(2001) Sieve Analysis of Fine and Coarse Aggregates
ASTM C 183	(1997) Sampling and the Amount of Testing Of Hydraulic Cement
ASTM D 5	(1997) Penetration of Bituminous Materials
ASTM D 75	(1997) Sampling Aggregates
ASTM D 140	(2001) Sampling Bituminous Materials
ASTM D 242	(1995; R 2000e1) Mineral Filler for Bituminous Paving Mixtures
ASTM D 422	(1963; R 1998) Particle-Size Analysis of Soils

ASTM D 977	(1998) Emulsified Asphalt
ASTM D 1559	(1989) Resistance to Plastic Flow of Bituminous Mixtures using Marshall Apparatus
ASTM D 1856	(1995a) Recovery of Asphalt from Solution By Abson Method."
ASTM D 2041	(2000) Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
ASTM D 2172	(2001e1) Quantitative Extraction of Bitumen from Bituminous Paving Mixtures
ASTM D 2216	(1998) Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
ASTM D 3381	(1992; R 1999) Viscosity-Graded Asphalt Cement for Use in Pavement Construction
ASTM D 3515	(2001) Hot-Mixed, Hot-Laid Bituminous Paving Mixtures
ASTM D 4318	(2000) Liquid Limit, Plastic Limit, and Plasticity Index of Soils

## 1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The "RE" designates that the Resident Office will review the submittal for the Government. Submit the following in accordance with Section 01330, SUBMITTAL PROCEDURES:

### SD-03 Product Data

Waybills and Delivery Tickets.

Waybills and delivery tickets submitted during progress of the work.

### SD-05 Design Data

Bituminous Pavement Mix Design.

Copy of Mix Design selected. Report to be submitted and signed by a Civil Engineer Licensed to Practice in the State of California.

## 1.3 PLANT, EQUIPMENT, MACHINES, AND TOOLS

### 1.3.1 General

The bituminous plant shall be of such capacity to produce the quantities of bituminous mixtures required. Hauling equipment, paving machines, rollers, miscellaneous equipment, and tools shall be provided in sufficient numbers and capacity and in proper working condition to place the bituminous paving mixtures at a rate equal to the plant output.

### 1.3.2 Mixing Plants

The mixing plant shall be an automatic or semiautomatic controlled commercially manufactured unit designed and operated to consistently produce a mixture within the job-mix formula (JMF). The plant shall have a minimum capacity of 100 tons per hour. Drum mixers shall be prequalified at the production rate to be used during actual mix production. The prequalification tests will include extraction and recovery of the asphalt cement in accordance with ASTM D 2172 and ASTM D 1856. The penetration of the recovered asphalt binder shall not be less than 60 percent of the original penetration, as measured in accordance with ASTM D 5.

### 1.3.3 Straightedge

The Contractor shall furnish and maintain at the site, in good condition, one 10-foot straightedge for each bituminous paver. Straightedge shall be made available for Government use. Straightedges shall be constructed of aluminum or other lightweight metal and shall have blades of box or box-girder cross section with flat bottom reinforced to insure rigidity and accuracy. Straightedges shall have handles to facilitate movement on pavement.

### 1.4 WEATHER LIMITATIONS

Unless otherwise directed, bituminous courses shall not be constructed when temperature of the surface of the existing pavement or base course is below 40 degrees F.

### 1.5 PROTECTION OF PAVEMENT

After final rolling, no vehicular traffic of any kind shall be permitted on the pavement until the pavement has cooled to 140 degrees F.

### 1.6 GRADE AND SURFACE-SMOOTHNESS REQUIREMENTS

Finished surface of bituminous courses, shall conform to gradeline and elevations shown and to surface-smoothness requirements specified.

#### 1.6.1 Plan Grade

The grade of the completed surface shall not deviate more than 0.05 foot from the plan grade.

#### 1.6.2 Surface Smoothness

When a 10-foot straightedge is laid on the surface parallel with the

centerline of the paved area or transverse to the pavement edge, the surface shall vary not more than 1/4 inch from the straightedge.

#### 1.7 GRADE CONTROL

Lines and grades shall be established and maintained by means of line and grade stakes placed at site of work. Elevations of bench marks used by the Contractor for controlling pavement operations at the site of work will be determined, established, and maintained by the Government. Finished pavement elevations shall be established and controlled at the site of work by the Contractor in accordance with bench mark elevations furnished by the Contracting Officer.

#### 1.8 SAMPLING AND TESTING

##### 1.8.1 Aggregate Sources

###### 1.8.1.1 General

Samples of aggregates shall be obtained by the Contractor for approval of aggregate sources and stockpiles prior to the start of production and at times during production of the bituminous mixtures. Times and points of sampling will be designated by the Contracting Officer. Samples will be the basis of approval of specific sources of stockpiles of aggregates for aggregate requirements. Unless otherwise directed, ASTM D 75 shall be used in sampling coarse and fine aggregate, and ASTM C 183 shall be used in sampling mineral filler. All tests necessary to determine compliance with requirements specified herein will be performed by the Contractor.

###### 1.8.1.2 Sources

Sources of aggregates shall be selected well in advance of the time the materials are required in the work. If a previously developed source is selected, evidence shall be submitted 15 days before starting production, indicating that the central-plant hot-mix bituminous pavements constructed with the aggregates have had a satisfactory service record of at least five years under similar climatic and traffic conditions. The Contracting Officer will make such tests and other investigations as necessary to determine whether aggregates meeting requirements specified herein can be produced from proposed sources. If a sample of material from a new source fails to meet specification requirements, the material represented by the sample shall be replaced, and the cost of testing the replaced sample will be at the expense of the Contractor. Approval of the source of aggregate does not relieve the Contractor of responsibility for delivery at the jobsite of aggregates that meet the requirements specified herein.

##### 1.8.2 Bituminous Materials

Bituminous materials shall be sampled in accordance with ASTM D 140. Tests necessary to determine conformance with requirements specified herein shall be performed by the Contractor. Sources where bituminous materials are obtained shall be selected in advance of the time when materials will be required in the work. Samples shall be taken before and during construction when shipments of bituminous materials are received or when



necessary to assure some condition of handling or storage has not been detrimental to the bituminous material. The samples will be taken by the Contractor and tested by the Contracting Officer.

#### 1.8.3 Sampling and Testing

Sampling and testing of bituminous materials will be performed by the Contractor.

### 1.9 DELIVERY, STORAGE, AND HANDLING OF MATERIALS

#### 1.9.1 Mineral Aggregates

Mineral aggregates shall be delivered to the site of the bituminous mixing plant and stockpiled in such manner as to preclude fracturing of aggregate particles, segregation, contamination, or intermingling of different materials in the stockpiles or cold-feed hoppers. Mineral filler shall be delivered, stored, and introduced into the mixing plant in a manner to preclude exposure to moisture or other detrimental conditions.

#### 1.9.2 Bituminous Materials

Bituminous materials shall be maintained at appropriate temperature during storage but shall not be heated by application of direct flame to walls of storage tanks or transfer lines. Storage tanks, transfer lines, and weigh buckets shall be thoroughly cleaned before a different type or grade of bitumen is introduced into the system. The asphalt cement shall be heated sufficiently to allow satisfactory pumping of the material; however, the storage temperature shall be maintained below 300 degrees F.

### 1.10 ACCESS TO PLANT AND EQUIPMENT

The Contracting Officer shall have access at all times to all parts of the paving plant for checking adequacy of the equipment in use; inspecting operation of the plant; verifying weights, proportions, and character of materials; and checking temperatures maintained in preparation of the mixtures.

## PART 2 PRODUCTS

### 2.1 BITUMINOUS HOT MIX

Bituminous hot mix shall consist of coarse aggregate, fine aggregate, mineral filler, bituminous material, and approved additives, if required, of the qualities and in the proportions specified and shall conform to the requirements contained in paragraphs: PROPORTIONING OF MIXTURE and ACCEPTABILITY OF WORK.

#### 2.1.1 Aggregates

Aggregates shall consist of crushed stone, crushed gravel, screening, sand, and mineral filler, as required. The portion of materials retained on the No. 4 sieve shall be known as coarse aggregate, the portion passing the No. 4 sieve and retained on the No. 200 sieve as fine aggregate, and the

portion passing the No. 200 sieve as mineral filler. Aggregate gradation shall conform to gradation(s) specified in TABLE I. TABLE I is based on aggregates of uniform specific gravity; the percentage passing various sieves may be changed by the Contracting Officer when aggregates of varying specific gravities are used. If materials from different sources are used for the coarse and fine aggregates, they shall be tested in accordance with ASTM C 127 and ASTM C 128 to determine their specific gravities. Adjustments of percentage passing various sieves may be changed by the Contracting Officer when aggregates vary by more than 0.2 in specific gravity.

TABLE I. AGGREGATE GRADATION

Sieve Size	Limits of Proposed Gradation	Operation Range	Contract
Compliance			
(3/4 inch)		100	100
(1/2 inch)		95-100	89-100
(3/8 inch)		80-95	75-100
No. 4	59-66	x + 5	x + 8
No. 8	43-49	x + 5	x + 8
No. 30	22-27	x + 5	x + 8
No. 200		3 - 8	0 - 11

In TABLE I above, the symbol "x" is the gradation which the Contractor proposed to furnish for the specific sieve. The proposed gradation shall meet the gradation shown in the table under "Limits of the Proposed Gradation". Changes from the one mix design to another shall not be made during the progress work unless permitted by the Contracting Officer. However, changes in proportions to conform to the approved mix design shall not be changes in the mix design.

#### 2.1.1.1 Coarse Aggregate

Coarse aggregate shall consist of clean, sound, durable particles meeting the following requirements.

- a. Percentage of loss shall not exceed 40 after 500 revolutions, as determined in accordance with ASTM C 131.
- b. Percentage of loss shall not exceed 18 after five cycles performed in accordance with ASTM C 88, using magnesium sulfate.
- c. Crushed gravel retained on the No. 4 sieve and each coarser sieve shall contain at least 75 percent by weight of crushed pieces having one or more fractured faces with the area of each face equal to at least 75 percent of the smallest midsectional area of piece. When two fractures are contiguous, the angle between planes of fractures shall be at least 30 degrees to count as two fractured faces.

#### 2.1.1.2 Fine Aggregate

Fine aggregate shall consist of clean, sound, durable particles including natural sand or crushed stone, or gravel that meets requirements for wear and soundness specified for coarse aggregate. The fine aggregate shall have a plasticity index of 2 percent or less and a liquid limit of 35 percent or less when tested in accordance with ASTM D 4318. Fine aggregate produced by crushing gravel shall have at least 90 percent by weight of crushed particles having two or more fractured faces in the portion retained on the No. 30 sieve. This requirement shall apply to the material before blending with natural sand when blending is necessary. Quantity of natural sand to be added to the mixture shall not exceed 25 percent by weight of coarse and fine aggregate and material passing the No. 200 sieve.

Natural sand shall be clean and free from clay and organic matter. Percentage of loss shall not exceed 18 after five cycles of the soundness test performed in accordance with ASTM C 88, using magnesium sulfate.

#### 2.1.1.3 Mineral Filler

Mineral filler shall conform to ASTM D 242.

Grain size in mm	Percent Finer
0.05	70-100
0.02	35-65
0.005	10-22

Grain size shall be determined in accordance with ASTM D 422.

#### 2.1.2 Bituminous Material

Asphalt cement shall conform to ASTM D 3381, Grade AR-8,000 or AR-4,000.

#### 2.1.3 Additives

The use of additives such as antistripping and antifoaming agents is subject to approval.

### 2.2 PROPORTIONING OF MIXTURE

#### 2.2.1 Bituminous Pavement Mix Design or Job Mix Formula

The Bituminous Pavement Mix Design or Job Mix Formula (JMF) for the bituminous mixture shall be signed by a Civil Engineer Licensed to Practice in the State of California and submitted by the Contractor and no bituminous shall be manufactured until it has been reviewed by the Contracting Officer. Blending of the aggregates will be accomplished by the Government. No payment will be made for mixtures produced prior to the approval of the JMF. The formula will indicate the percentage of each sieve fraction of aggregate, the percentage of asphalt, unit weight, minimum stability, percent of voids total mix, and the temperature of the completed mixture when discharged from the mixer. Tolerances are given in TABLE II for asphalt content, temperature, and aggregate grading for tests conducted on the mix as discharged from the mixing plant; however, the final evaluation of aggregate gradation and asphalt content will be based on paragraph: ACCEPTABILITY OF WORK. Bituminous mix that deviates more

than 25 degrees F from the JMF shall be rejected. The JMF may be adjusted during construction to improve paving mixtures. Adjustments to the JMF are subject to the approval of the Contracting Officer. The percentage of asphalt in the job-mix formula shall be between 4 and 6.

TABLE II. JOB-MIX TOLERANCES

Material	Tolerance, Plus or Minus
Aggregate passing No. 4 sieve or larger	5 percent
Aggregate passing Nos. 8, 16, 30, and 50 sieves	4 percent
Aggregate passing Nos. 100 and 200 sieves	2 percent
Bitumen	0.25 percent
Temperature of mixing	25 degrees F

#### 2.2.2 Test Properties of Bituminous Mixtures

Finished mixture shall meet requirements described below when tested in accordance with ASTM D 1559. All samples will be compacted with 50 blows of specified hammer on each side of sample. When bituminous mixture fails to meet the requirements specified below, the paving operation shall be stopped until the cause of noncompliance is determined and corrected.

##### 2.2.2.1 Stability, Flow, and Voids

Requirements for stability, flow, and voids are shown in TABLES III and IV for nonabsorptive and absorptive aggregates, respectively.

TABLE III. NONABSORPTIVE-AGGREGATE MIXTURE

	Asphalt Mix
Stability minimum, pounds	500
Flow maximum, 1/100-inch units	20
Voids total mix, percent (1)	3-5
Voids filled with bitumen, percent (2)	75-85

(1) The Contracting Officer may permit deviations from limits specified when gyratory method of design is used to develop the JMF.

(2) The Contracting Officer may permit deviation from limits specified for voids filled with bitumen in order to stay within limits for percent voids total mix.

TABLE IV. ABSORPTIVE-AGGREGATE MIXTURE

	Asphalt Mix
Stability minimum, pounds	500
Flow maximum, 1/100-inch units	20
Voids total mix, percent (1)	2-4
Voids filled with bitumen, percent (2)	80-90

(1) The Contracting Officer may permit deviations from limits specified when gyratory method of design is used to develop the JMF.

(2) The Contracting Officer may permit deviation from limits specified for voids filled with bitumen in order to stay within limits for percent voids total mix.

a. When the water-absorption value of the entire blend of aggregate does not exceed 2.5 percent as determined in accordance with ASTM C 127 and ASTM C 128, the aggregate is designated as nonabsorptive. The theoretical specific gravity computed from the apparent specific gravity or ASTM D 2041 will be used in computing voids total mix and voids filled with bitumen, and the mixture shall meet requirements in TABLE III.

b. When the water-absorption value of the entire blend of aggregate exceeds 2.5 percent as determined in accordance with ASTM C 127 and ASTM C 128, the aggregate is designated as absorptive. The theoretical specific gravity computed from the bulk-impregnated specific gravity method contained in ASTM D 2041 shall be used in computing percentages of voids total mix and voids filled with bitumen; the mixture shall meet requirements in TABLE IV.

#### 2.2.2.2 Stability

The index of retained stability must be greater than 75 percent as determined by ASTM D 1559. When the index of retained stability is less than 75, the aggregate stripping tendencies may be countered by the use of hydrated lime or by treating the bitumen with an approved antistripping agent. The hydrated lime is considered as mineral filler and should be considered in the gradation requirements. The amount of hydrated lime or antistripping agent added to bitumen shall be sufficient, as approved, to produce an index of retained stability of not less than 75 percent. No additional payment will be made to the Contractor for addition of antistripping agent required.

### PART 3 EXECUTION

#### 3.1 BASE COURSE CONDITIONING

The surface of the base course will be inspected for adequate compaction and surface tolerances. Unsatisfactory areas shall be corrected.

#### 3.2 PREPARATION OF BITUMINOUS MIXTURES

Rates of feed of aggregates shall be regulated so that the moisture content and temperature of aggregates will be within specified tolerances. Aggregates, mineral filler, and bitumen shall be conveyed into the mixer in proportionate quantities required to meet the JMF. Mixing time shall be as required to obtain a uniform coating of the aggregate with the bituminous material. Temperature of bitumen at time of mixing shall not exceed 300

degrees F. Temperature of aggregate and mineral filler in the mixer shall not exceed 325 degrees F when bitumen is added. Overheated and carbonized mixtures or mixtures that foam shall not be used.

### 3.3 WATER CONTENT OF AGGREGATES

Drying operations shall reduce the water content of mixture to less than 0.75 percent. The water content test will be conducted in accordance with ASTM D 2216; the weight of the sample shall be at least 500 grams. If the water content is determined on hot bin samples, the water content will be a weighted average based on composition of blend.

### 3.4 STORAGE OF BITUMINOUS PAVING MIXTURE

Storage shall conform to the applicable requirements of ASTM D 3515; however, in no case shall the mixture be stored for more than 4 hours.

### 3.5 TRANSPORTATION OF BITUMINOUS MIXTURE

Transportation from paving plant to site shall be in trucks having tight, clean, smooth beds lightly coated with an approved releasing agent to prevent adhesion of the mixture to the truck bodies. Excessive releasing agent shall be drained prior to loading. Each load shall be covered with canvas or other approved material of ample size to protect mixture from weather and to prevent loss of heat. Loads that have crusts of cold, unworkable material or that have become wet will be rejected. Hauling over freshly placed material will not be permitted.

### 3.6 SURFACE PREPARATION OF UNDERLYING COURSE

Prior to placing of the asphalt concrete, the underlying course shall be cleaned of all foreign or objectionable matter with power brooms and hand brooms.

### 3.7 TACK COATING

Contact surfaces of previously constructed pavement, curbs, manholes, and other structures shall be sprayed with a thin coat of bituminous material conforming to ASTM D 977, Grade SS-1h.

### 3.8 PLACING

Bituminous courses shall be constructed only when the base course or existing pavement has no free water on the surface. Bituminous mixtures shall not be placed without ample time to complete spreading and rolling during daylight hours, unless approved satisfactory artificial lighting is provided.

#### 3.8.1 General Requirements for Use of Mechanical Spreader

Range of temperatures of mixtures, when dumped into the mechanical spreader, shall be as determined by the Contracting Officer. Mixtures having temperatures less than 225 degrees F when dumped into the mechanical spreader shall not be used. The mechanical spreader shall be adjusted and

the speed regulated so that the surface of the course being laid will be smooth and continuous without tears and pulls, and of such depth that, when compacted, the surface will conform to the cross section indicated. Placing with respect to center line areas one-way slope or high side of areas with one-way slope shall be as directed. Placing of the mixture shall be as nearly continuous as possible, and speed of placing shall be adjusted, as directed, to permit proper rolling. When segregation occurs in the mixture during placing, the spreading operation shall be suspended until the cause is determined and corrected.

#### 3.8.2 Placing Strips Succeeding Initial Strips

In placing each succeeding strip after initial strip has been spread and compacted as specified below, the screed of the mechanical spreader shall overlap the previously placed strip 2 to 3 inches and be sufficiently high so that compaction produces a smooth dense joint. Mixture placed on the edge of a previously placed strip by the mechanical spreader shall be pushed back to the edge of the strip by use of a lute. Excess mixture shall be removed and wasted.

#### 3.8.3 Handspreading in Lieu of Machine Spreading

In areas where the use of machine spreading is impractical, the mixture shall be spread by hand. Spreading shall be in a manner to prevent segregation. The mixture shall be spread uniformly with hot rakes in a loose layer of thickness that, when compacted, will conform to required grade, density, and thickness.

### 3.9 COMPACTION OF MIXTURE

Rolling shall begin as soon after placing as the mixture will bear a roller without undue displacement. Delays in rolling freshly spread mixture will not be permitted. After initial rolling, preliminary tests of crown, grade, and smoothness shall be made by the Contractor. Deficiencies shall be corrected so that the finished course will conform to requirements for grade and smoothness specified herein. Grade and smoothness will be checked in each section of completed pavement by the Contracting Officer for compliance and will be evaluated as specified in paragraph:

ACCEPTABILITY OF WORK. After the Contractor is assured of meeting grade and smoothness requirements, rolling shall be continued until a mat density of 97.0 to 100.0 percent and a joint density of 95.0 to 100.0 percent of density of laboratory-compacted specimens of the same mixture is obtained. The density will be determined and evaluated as specified in paragraph: ACCEPTABILITY OF WORK. Places inaccessible to rollers shall be thoroughly compacted with hot hand tampers.

#### 3.9.1 Testing of Mixture

At the start of the plant operation, a quantity of mixture shall be prepared that is sufficient to construct a test section at least 50 feet long, two spreader widths wide and of thickness to be used in the project. Mixture shall be placed, spread, and rolled with equipment to be used in the project and in accordance with the requirements specified above. This test section shall be tested and evaluated as a section and shall conform

to all specified requirements. If test results are satisfactory, the test section shall remain in place as part of the completed pavement. If tests indicate that the pavement does not conform to specification requirements, necessary adjustments to plant operations and rolling procedures shall be made immediately, and test section will be evaluated as specified in paragraph: ACCEPTABILITY OF WORK. Additional test sections, as directed, shall be constructed and sampled for conformance to specification requirements. In no case shall the Contractor start full production of a bituminous course mixture without approval.

### 3.9.2 Correcting Deficient Areas

Mixtures that become contaminated or are defective shall be removed to the full thickness of the course. Edges of the area to be removed shall be cut so that sides are perpendicular and parallel to the direction of traffic and so that the edges are vertical. Edges shall be sprayed with bituminous materials conforming to paragraph: TACK COATING. Fresh paving mixture shall be placed in the excavated areas in sufficient quantity so that the finished surface will conform to grade and smoothness requirements. Paving mixture shall be compacted to the density specified herein. Skin patching of an area that has been rolled shall not be permitted.

## 3.10 JOINTS

### 3.10.1 General

Joints between successive work days, or joints that have become cold (less than 175 degrees F) shall be made to insure continuous bond between the old and new sections of the course. All joints shall have the same texture and smoothness as other sections of the course. Contact surfaces of previously constructed pavements coated by dust, sand, or other objectionable material shall be cleaned by brushing or shall be cut back as directed. When directed by the Contracting Officer, the surface against which new material is placed shall be sprayed with a thin, uniform coat of bituminous material conforming to paragraph: TACK COATING. Material shall be applied far enough in advance of placement of a fresh mixture to insure adequate curing. Care shall be taken to prevent damage or contamination of the sprayed surface.

### 3.10.2 Transverse Joints

The roller shall pass over the unprotected end of a strip of freshly placed material only when placing is discontinued or delivery of the mixture is interrupted to the extent that the material in place may become cold. In all cases, prior to continuing placement, the edge of previously placed pavement shall be cut back to expose an even vertical surface for full thickness of the course. In continuing placement of a strip, the mechanical spreader shall be positioned on the transverse joint so that sufficient hot mixture will be spread to obtain a joint after rolling that conforms to the required density and smoothness specified herein.

### 3.10.3 Longitudinal Joints

Edges of a previously placed strip shall be prepared such that the pavement



immediately adjacent to the joint between this strip and the succeeding strip meets the requirements for grade, smoothness, and density specified in paragraph ACCEPTABILITY OF WORK.

### 3.11 ACCEPTABILITY OF WORK

#### 3.11.1 General

##### 3.11.1.1 Section Evaluation

In order to evaluate aggregate gradation, asphalt content, and density, one random sample shall be taken from the middle of a section and one taken from the joint. A coring machine will be used for taking samples from the completed pavement. Core samples will be taken with the coring machine centered over the joint. After air drying to a constant weight, random samples obtained from the area shall be used for density determination in accordance with ASTM D 1559. Samples for determining asphalt content and aggregate gradation shall be taken from loaded trucks within each section placed. Asphalt content shall be determined in accordance with ASTM D 2172, Method A or B. Aggregate gradation shall be determined for the mix by testing the recovered aggregate in accordance with ASTM C 136 and ASTM C 117.

##### 3.11.1.2 Section Failure

When a section of material fails to meet the specification requirements, that section shall be removed and replaced or accepted at a reduced price. The lowest percent payment for any pavement characteristic (i.e., gradation, asphalt content, density, grade, and smoothness) defined below shall be the percent payment for that section. The percent payment is based on the pavement characteristics and the contract unit price.

##### 3.11.1.3 Optional Sampling and Testing

The Contracting Officer reserves the right to sample and test any area which appears to deviate from the specification requirements. Testing in these areas will be in addition to the section testing, and the requirements for these areas will be the same as those for a section.

#### 3.11.2 Aggregate Gradation

The mean absolute deviation of a section aggregate gradations from the JMF for each sieve size will be evaluated and compared with TABLE V. The percent payment based on aggregate gradation shall be the lowest value determined for any sieve size in TABLE V. All tests for aggregate gradation will be completed and reported within 24 hours after completion of construction of each section. The computation of mean absolute deviation for one sieve size is illustrated below:

Example: Assume the following JMF and section test results for aggregate gradation

Percent by Weight Passing Sieves

Sieve Size	JMF	Test No. 1	Test No. 2	Test No. 3	Test No. 4
3/4 inch	100	100	100	100	100
1/2 inch	88	87	88	90	88
3/8 inch	75	72	77	78	74
No. 4	64	60	65	67	62
No. 8	53	50	56	57	52
No. 16	42	39	44	45	41
No. 30	32	30	34	35	32
No. 50	20	17	20	22	21
No. 100	10	8	10	10	11
No. 200	6	4	7	8	6

Mean Absolute Deviation (for 75 micrometer (No. 200) sieve) = ((Absolute value of 4-6) + (Absolute value of 7-6) + (Absolute value of 8-6) + (Absolute value of 6-6))/4 = (2 + 1 + 2 + 0)/4 = 1.25

The mean absolute deviation for other sieve sizes can be determined in a similar way for this example to be:

Sieve Size	19 mm	12.5 mm	9.5 mm	4.75 mm	2.36 mm	1.18 mm	0.600 mm	0.300 mm	0.075 mm
------------	-------	---------	--------	---------	---------	---------	----------	----------	----------

Mean Absolute Deviation	0	0.75	2.25	2.50	2.75	2.25	1.75	1.50	0.75
-------------------------	---	------	------	------	------	------	------	------	------

Sieve Size	3/4 inch	1/2 inch	3/8 inch	No. 4	No. 8	No. 16	No. 30	No. 50	No. 100
------------	----------	----------	----------	-------	-------	--------	--------	--------	---------

Mean Absolute Deviation	0	0.75	2.25	2.50	2.75	2.25	1.75	1.50	0.75
-------------------------	---	------	------	------	------	------	------	------	------

The least percent payment based on any sieve size listed in TABLE V would be 98 percent for the 75 micrometer (No. 200) sieve. Therefore, for this example the percent payment based on aggregate gradation is 98 percent.

TABLE V-B. PERCENT PAYMENT BASED ON MEAN ABSOLUTE DEVIATION OF AGGREGATE GRADATIONS FROM JMF

Sieve Size	Percent Payment Based On Mean Absolute Deviation from JMF						
	0.0-1.0	1.1-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	Above 6.0
3/4 inch	100	100	100	100	98	95	90
1/2 inch	100	100	100	100	98	95	90
3/8 inch	100	100	100	100	98	95	90
No. 4	100	100	100	100	98	95	90
No. 8	100	100	100	98	95	90	reject
No. 16	100	100	100	98	95	90	reject
No. 30	100	100	100	98	95	90	reject
No. 50	100	100	100	98	95	90	reject
No. 100	100	98	95	90	90	reject	reject

No. 200          100          98          90          reject   reject   reject   reject

### 3.11.3 Asphalt Content

The mean absolute deviation of a section asphalt contents from the JMF will be evaluated and compared with TABLE VI. The percent payment based on asphalt content shall be the value determined in TABLE VI. Asphalt content tests shall be completed and reported within 24 hours after construction of the section.

TABLE VI. PERCENT PAYMENT BASED ON ASPHALT CONTENT

Mean Absolute Deviation of Extracted Asphalt Content from JMF	Percent Payment
less than 0.25	100
0.25-0.30	98
0.31-0.35	95
0.36-0.40	90
above 0.40	reject

### 3.11.4 Density

The average density will be expressed as a percentage of the laboratory density. The laboratory density for each area will be determined in accordance with ASTM D 1559. Laboratory samples will be prepared from asphalt mixture which has not been reheated. Samples will be compacted at 250 degrees F within 2 hours of the time the mixture was prepared at the asphalt plant. Laboratory samples will be prepared in accordance with ASTM D 1559.

#### 3.11.4.1 Field Density

The field density will be determined and compared with TABLE VII. The percent payment based on density shall be the lowest value determined from TABLE VII. The percent payment based on area density will be for all of the material placed in the area.

TABLE VII. PERCENT PAYMENT BASED ON DENSITY

Average Section Density (4 Cores)	Percent Payment
97.0-100.0	100.0
96.9	100.0
96.8-100.1	99.9
96.7	99.8
96.6-100.2	99.6
96.5	99.4
96.4-100.3	99.1
96.3	98.7
96.2-100.4	98.3
96.1	97.8
96.0-100.5	97.3
95.9	96.3
95.8-100.6	94.1
95.7	92.2

95.6-100.7	90.3
95.5	87.9
95.4-100.8	85.7
95.3	83.3
95.2-100.9	80.6
95.1	78.0
95.0-101.0	75.0
below 95.0, above 101.0	reject

#### 3.11.4.2 Section Density

All density results on a section will be completed and reported within 24 hours after construction of that lot. When the Contracting Officer considers it necessary to take additional samples for density measurements, samples will be taken in groups of four cored samples. The percent payment will be determined for each additional group of four samples and averaged with the percent payment for the original group to determine the final percent payment. The Contractor shall fill all sample holes with hot mix and compact.

#### 3.11.5 Grade

Grade-conformance tests will be conducted by the Government. The finished surface of the pavement will be tested for conformance with plan-grade requirements. Within 5 working days after completion, the Contracting Officer will inform the Contractor in writing of results of grade-conformance tests. The finished grade of each pavement area shall be determined by running lines of levels at intervals of 25 feet or less longitudinally and transversely to determine the elevation of the completed pavement. When more than 5 percent of all measurements made within an area are outside the tolerances specified in paragraph: GRADE AND SURFACE-SMOOTHNESS REQUIREMENTS, the payment for that lot will not exceed 95 percent of the bid price. In areas where the grade exceeds the plan-grade tolerances given in paragraph: GRADE AND SURFACE-SMOOTHNESS REQUIREMENTS by more than 50 percent, the Contractor shall remove the deficient area and replace with fresh paving mixture at no additional cost to the Government. Sufficient material shall be removed to allow at least 1 inch of asphalt concrete to be placed. Skin patching for correcting low areas or planing for correcting high areas shall not be permitted.

#### 3.11.6 Surface Smoothness

After completion of final rolling of a area, the compacted surface will be tested by the Contracting Officer with a 10-foot straightedge. Measurements will be made perpendicular to and across all pavement sections at distances spread 25 feet apart. Location and deviation from straightedge of all measurements will be recorded. When more than 5 percent of all measurements in a section exceed the specified tolerance, the unit price for that section shall not exceed 95 percent of the bid price. The Contractor shall remove the deficient area and replace with fresh paving mixture at no additional cost to the Government. Sufficient material shall be removed to allow at least 1 inch of asphalt concrete to be placed. Skin patching for correcting low areas or planing for

correcting high areas shall not be permitted.

### 3.12 Waybills and Delivery Tickets

Copies of waybills or delivery tickets shall be submitted to the Contracting Officer's Representative, during the progress of the work. The Contractor shall furnish the Contracting Officer's Representative scale tickets for each load of material weighed; these tickets shall include tare weight, identification mark of each vehicle weighed, plus date, time, and location of the loading. Tickets shall be furnished at the point and time individual loads arrive at the work site. A master log of all vehicle loading shall be furnished for each day of loading operation. The Contractor shall file with the Contracting Officer's Representative the master log of loadings, certified waybills and/or certified tickets, within 24 hours of material delivery. Prior to the final payment, the Contractor shall furnish written certification that the material recorded on the submitted waybills and/or certified tickets was actually used in the construction covered by the contract.

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## SECTION 02558

## BITUMINOUS TACK COAT

## PART 1 GENERAL1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

## ASTM INTERNATIONAL (ASTM)

ASTM D 140	(2001) Sampling Bituminous Materials
ASTM D 977	(1998) Emulsified Asphalt
ASTM D 2995	(1999) Determining Application Rate of Bituminous Distributors

## 1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The "RE" designates that the Resident Office will review the submittal for the Government. Submit the following in accordance with Section 01330, SUBMITTAL PROCEDURES:

## SD-06 Test Reports

## Testing.

Copies of all test results, within 24 hours of completion of tests. Certified copies of the manufacturer's test reports indicating compliance with applicable specified requirements, not less than 30 days before the material is required in the work.

## SD-07 Certificates

## Waybills and Delivery Tickets.

Waybills and delivery tickets, during progress of the work. Before the final statement is allowed, certified waybills and certified delivery tickets for all bituminous material used in the construction of the pavement covered by the contract shall be filed.

## 1.3 PLANT, EQUIPMENT, MACHINES AND TOOLS

## 1.3.1 General Requirements



All plant, equipment, machines and tools used in the work shall be subject to approval and shall be maintained in a satisfactory working condition at all times.

#### 1.3.2 Bituminous Distributor

The distributor shall have pneumatic tires of such size and number to prevent rutting, shoving or otherwise damaging the base surface or other layers in the pavement structure. The distributor shall be designed and equipped to spray the bituminous material in a uniform coverage at the specified temperature, at readily determined and controlled rates with an allowable variation from the specified rate of not more than plus or minus 5 percent, and at variable widths. Distributor equipment shall include a separate power unit for the bitumen pump, full-circulation spray bars, tachometer, pressure gauges, volume-measuring devices, adequate heaters for heating of materials to the proper application temperature, a thermometer for reading the temperature of tank contents, and a hand hose attachment suitable for applying bituminous material manually to areas inaccessible to the distributor. The distributor shall be equipped to circulate and agitate the bituminous material during the heating process.

#### 1.3.3 Power Brooms and Power Blowers

Power brooms and power blowers shall be suitable for cleaning the surfaces to which the tack coat is to be applied.

#### 1.4 WEATHER LIMITATIONS

Tack coat shall be applied only when the surface to receive the tack coat is dry. Tack coat shall be applied only when the atmospheric temperature in the shade is 50 degrees F or above and when the temperature has not been below 35 degrees F for the 12 hours prior to application.

### PART 2 PRODUCT

#### 2.1 BITUMINOUS MATERIAL

Emulsified asphalt shall conform to ASTM D 977, Grade SS-1h.

### PART 3 EXECUTION

#### 3.1 PREPARATION OF SURFACE

Immediately before applying the tack coat all loose material, dirt, clay, or other objectionable material shall be removed from the surface to be treated. The area to be tacked shall also be dry and clean.

#### 3.2 APPLICATION RATE

Bituminous material for the tack coat shall be applied in quantities of not less than 0.05 gallon nor more than 0.18 gallon per square yard of pavement surface. The exact quantities within the range specified, which may be varied to suit field conditions, will be determined by the Contracting

Officer.

### 3.3 APPLICATION TEMPERATURE

Asphalt application temperature shall provide an application viscosity between 20 and 100 seconds, Saybolt Furol, or between 40 and 200 centistokes, kinematic. The temperature viscosity relation shall be furnished to the Contracting Officer.

#### Emulsions

SS-1h                      70-160 degrees F

### 3.4 APPLICATION

Following preparation and subsequent inspection of the surface, the tack coat shall be applied at the specified rate with uniform distribution over the surface to be treated. All areas and spots missed by the distributor shall be properly treated with the hand spray. Following application of the tack material and prior to application of the succeeding layer of pavement, the tack shall be allowed to cure and to obtain evaporation of any volatiles or moisture. Until the succeeding layer of pavement is placed, the tacked area shall be maintained by protecting the surface against damage and by repairing and retacking deficient areas at no additional cost to the Government. If required, clean dry sand shall be spread to effectively blot up any excess bituminous material. No smoking, fires, or flames other than the heaters that are a part of the equipment shall be permitted within 25 feet of heating, distributing, and transferring operations of bituminous material other than bituminous emulsions.

### 3.5 FIELD QUALITY CONTROL

Samples of the bituminous material shall be tested for compliance with the applicable specified requirements. A sample shall be obtained and tested by the Contractor for every 2500 gallons of bituminous material used.

### 3.6 SAMPLING AND TESTING

#### 3.6.1 General Requirements

Sampling and testing shall be performed by an approved commercial testing laboratory or by facilities furnished by the Contractor. No work requiring testing will be permitted until the facilities have been inspected and approved.

#### 3.6.2 Sampling

The samples of bituminous material, unless otherwise specified, shall be in accordance with ASTM D 140.

#### 3.6.3 Initial Sampling and Testing

##### 3.6.3.1 Bituminous Materials

Sources from which bituminous materials are to be obtained shall be selected and notification thereof furnished the Contracting Officer within 15 days after the award of the contract.

#### 3.6.3.2 Calibration Test

The Contractor shall furnish all equipment, materials, and labor necessary to calibrate the bituminous distributor. Calibration shall be made with the approved job material and prior to applying the tack coat material to the prepared surface. Calibration of the bituminous distributor shall be in accordance with ASTM D 2995.

#### 3.6.3.3 Trial Applications

As a preliminary to providing the complete tack coat, three lengths of at least 100 feet for the full width of the distributor bar shall be tacked to evaluate the amount of tack that can be satisfactorily applied. Unless otherwise authorized, the trial application rate of bituminous materials shall be applied in the amount of 0.05 gallon per square yard. Other trial applications shall be made using various amounts of material as may be deemed necessary.

#### 3.6.4 Sampling and Testing During Construction

Quality control sampling and testing shall be performed as required in paragraph: FIELD QUALITY CONTROL.

#### 3.6.5 Waybills and Delivery Tickets

Copies of waybills or delivery tickets shall be submitted to the Contracting Officer's Representative, during the progress of the work. The Contractor shall furnish the Contracting Officer's Representative scale tickets for each load of material weighed; these tickets shall include tare weight, identification mark of each vehicle weighed, plus date, time, and location of the loading. Tickets shall be furnished at the point and time individual loads arrive at the work site. A master log of all vehicle loading shall be furnished for each day of loading operation. The Contractor shall file with the Contracting Officer's Representative the master log of loadings, certified waybills and/or certified tickets, within 24 hours of material delivery. Prior to the final payment, the Contractor shall furnish written certification that the material recorded on the submitted waybills and/or certified tickets was actually used in the construction covered by the contract.

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## SECTION 02600

## STONE PROTECTION

## PART 1 GENERAL

## 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

## ASTM INTERNATIONAL (ASTM)

ASTM C 33	(2002a) Concrete Aggregates
ASTM C 88	(1999a) Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
ASTM C 127	(2001) Density, Relative Density (Specific Gravity), and Absorption of Coarse Aggregate
ASTM C 131	(2001) Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C 136	(2001) Sieve Analysis of Fine and Coarse Aggregates
ASTM C 295	(1998) Petrographic Examination of Aggregates for Concrete
ASTM C 535	(2001) Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM D 1141	(1975; R 1980) Substitute Ocean Water
ASTM D 5519	(1994; R 2001) Particle Size Analysis of Natural and Man-Made Riprap Materials
ASTM E 548	(1994e1) General Criteria Used for Evaluating Laboratory Competence

## 1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When

used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Stone Sources; G

Name and location of quarry.

SD-05 Design Data

Method of placement; G

The following shall be submitted in accordance with Section 01330 if the source of riprap is not from the listed sources.

SD-06 Test Reports

Stone Quality Testing  
Gradation Sampling and Testing

Quality compliance and gradation test results performed in accordance with 2.1.4 and 2.1.5.

SD-07 Certificates

Waybills and Delivery Tickets

Copies of waybills and delivery tickets shall be submitted as stated in paragraph: Waybills and Delivery Tickets.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Definitions

2.1.1.1 Rounded Stone

Stone which is obtained from alluvial deposits and is nearly spherical and well rounded.

2.1.1.2 Angular Stone

Stone which is obtained from bedrock deposits and is angular in shape.

2.1.2 General

The Contractor shall make all arrangements, pay all royalties, and secure all permits for the procurement, furnishing, and transporting of stone. The Contractor shall vary the quarrying, processing, loading, and placing operations, to produce the sizes and quality of stone specified. If the stone being furnished by the Contractor does not fully meet all the

requirements of these specifications , the Contractor shall furnish, at no additional cost to the Government, other stone meeting the requirements of these specifications.

### 2.1.3 Stone Sources

#### 2.1.3.1 Stone from Project Excavation

Stone conforming to these specifications may be available from the required excavation(s). As the quantity of stone from excavations may be insufficient, additional required stone in conformance with this specification may need to be obtained from offsite sources.

#### 2.1.3.2 Source Authorization

Before any stone is produced from a source for completion of the work under this contract, the source of stone must be authorized by the Contracting Officer's Representative. Authorization of a stone source shall not be construed as a waiver of the right of the Government to require the Contractor to furnish stone which complies with these specifications. Materials produced from localized areas, intervals, or strata will be rejected, when such materials do not comply with the specifications.

#### 2.1.3.3 Quarry Inspection

The proposed quarry source shall be inspected prior to source authorization. The quarry inspection shall be performed by the Contracting Officer's Representative, a representative of the Contractor, a representative of the quarry, and an engineering geologist from the Geotechnical Branch of the Los Angeles District.

#### 2.1.3.4 Source Development

Before a proposed source or sources of stone will be considered for inspection sampling and testing, the Contractor must demonstrate that the source has sufficient stone to fulfill the contract requirements. If sufficient amounts of stone conforming to these specifications are not available from a source or sources used in the work, the Contractor shall submit stone from another source for authorization.

#### 2.1.3.5 Source Documentation

Authorization of a proposed stone source will be based on a quarry inspection test results and/or service records. In general, current Corps of Engineers test results shall be required, as outlined in paragraph: Quality Compliance Testing, below. In special cases, however, the Contracting Officer's Representative may elect to use either past Corps of Engineers test results, test results from other agencies or private laboratories, or service records. A service record is considered to be acceptable if stone from the proposed source has remained sound and functional after at least 10 years of exposure on a project similar to the one to be constructed under these specifications.



#### 2.1.3.6 Listed Stone Sources

The following are a few of the sources within the project area (and some that are farther away), which have either undergone recent quality compliance testing for use on Corps of Engineers projects or have acceptable service records:

Source Name	Nearest City
Harlow	Corona
Corona-Pacific	Corona
All-American Asphalt	Corona
3M	Corona
Eagle Valley	Corona
Pebbly Beach	Catalina
Pyrite Street	Riverside
Ormond (Atkinson)	Riverside
Slover Mountain	Colton
Fish Canyon	Azusa
Gillibrand	Newhall

Listing of a stone source is not to be construed as to current or future availability of the source, authorization of all materials from the source, nor as a waiver of inspection and testing of the source. Stone produced from any listed source must meet all the requirements set forth in these specifications. Listing of a stone source is also not to be construed as an indication that the source can produce the total quantity of stone required for the project. Stone may be furnished from other sources designated by the Contractor and authorized by the Contracting Officer's Representative, subject to the conditions stated herein.

#### 2.1.4 Stone Quality

##### 2.1.4.1 Quality Compliance Testing

If the Contractor proposes to furnish stone from an unlisted source, or a listed source which has not been tested in 5 years, the Contractor shall have evaluation tests performed on stone samples collected from the proposed source. The samples shall be submitted to an approved laboratory for testing a minimum of 30 days in advance of the time when the stone will be required in the work. The samples shall consist of at least 300 pounds of representative stone. The quarry faces and the stockpiles to be used shall be examined and sampled. Samples shall be collected at the quarry by the Contracting Officer's Representative, a representative of the Contractor, a representative of the quarry, and an engineering geologist from the Geotechnical Branch of the Los Angeles District. The Contractor will then ship the samples at the Contractor's expense to an approved laboratory. The laboratory to perform the required testing shall be approved based on compliance with ASTM E 548 and relevant paragraphs of ASTM D 3470. The laboratory will be under the direct supervision of a state licensed Civil Engineer, Geologist, or Engineering Geologist. No testing shall be permitted until the laboratory has been inspected and approved. The results of the tests shall be delivered to the Contracting Officer's Representative as soon as they are received from the laboratory.

#### 2.1.4.2 Stone Quality Testing Requirements

Stone shall be subjected to such tests as are necessary to demonstrate to the satisfaction of the Contracting Officer's Representative that the materials are acceptable for use in the work. At a minimum, the stone shall meet the following test requirements:

Test	Test Method	Requirement
Specific Gravity (Bulk SSD)	ASTM C 127	2.60 minimum
Absorption	ASTM C 127	2.0% maximum
Wetting and Drying	SPD Test Procedure(1)	No fracturing(3)
Sulfate Soundness	ASTM C 88(2)	10% max.loss(4)
Abrasion Loss	ASTM C 535	40% max. loss(4)

In addition to the above tests, the stone shall be subjected to a petrographic and X-ray diffraction analysis, in accordance with ASTM C 295(5). The stone must not contain any expansive clays. Stone for grouted stone protection shall not contain excessive amounts of deleterious minerals, associated with alkali-silica or alkali-carbonate reactions, as described in ASTM C 33.

NOTE: (1): Test procedure for wetting and drying test. The entire sample is carefully examined, and representative test specimens are selected. The sample should be large enough to produce two cut slabs, each 25 millimeters (1 inch) thick (+/-6 millimeters), with a minimum surface area of 0.019 square meters (28.8 square inches) on one side. Two chunks, approximately seventy-six by one-hundred two millimeters (3 by 4 inches), are also chosen. The slabs and chunks are carefully examined under a low-power microscope, and all visible surface features are noted and recorded. The specimens are then oven-dried at 60 degrees C., for eight hours, cooled, and weighed to the nearest tenth of a gram. The test specimens are photographed, to show all surface features, before the test. The chunks and slabs are then subjected to fifteen cycles of wetting and drying. One slab and one chunk are soaked in fresh tap water, the other slab and chunk are soaked in salt water, prepared in accordance with ASTM D 1141. Each cycle consists of soaking for sixteen hours, at room temperature and then drying in an oven for eight hours, at 60 degrees C. After each cycle, the specimens are examined with the low-power microscope, to check for opening or movement of fractures, flaking along edges, swelling of clays, softening of rock surfaces, heaving of micaceous minerals, breakdown of matrix material, and any other evidence of weakness developing in the rock. The cycle in which any of these actions occurs is recorded. After fifteen cycles, the slabs and chunks are again carefully examined, and all changes in the rocks are noted and recorded. The test specimens, together with all particles broken-off during the test, are oven-dried, weighed, and photographed.

NOTE: (2): The test shall be made on 50 particles, each weighing 100 grams (0.22 lbs.), +/-25 grams, in lieu of the gradation given in ASTM C 88.

NOTE: (3): Weakening and loss of individual surface particles is permissible, unless bonding of the surface grains softens and causes

general disintegration of the surface material.

NOTE: (4): Stone which has a loss greater than the specified limit will be accepted, if the Contractor demonstrates that the stone has a satisfactory service record.

NOTE: (5): The test procedure for Petrographic and X-ray Diffraction is performed according to ASTM C 295, except for the following:

- (a) A color, microscopic photograph shall be made of each stone type, and the individual minerals within the stone shall be identified by labels and arrows, upon the photograph.
- (b) A very detailed macroscopic and microscopic description shall be made of the stone, to include all the mineral constituents, individual sizes, their approximate percentages, and mineralogical histories. A description of stone hardness, texture, weathering, and durability factors shall also be discussed.
- (c) A written summary of the suitability of stone for use as riprap, based on the Petrographic and X-ray tests and the results of ASTM C 535, shall be presented in the final laboratory report on stone quality.

#### 2.1.4.3 Stone Acceptance Criteria

Prior to placement, all stone shall be subject to acceptance, by the Contracting Officer's Representative. Acceptance of any stone shall not constitute acceptance of all stone from a source. All accepted stone shall be as follows:

- a. of the same lithology as the original stone from which test results or service records were taken, as a basis for authorization of the source;
- b. sound, durable, hard, and free of laminations, weak cleavages, undesirable weathering, or blasting or handling-induced fractures (or fracture zones, which subtend more than 1/3 of the total circumference of the stone, along the plane of fracturing);
- c. of such character that the stone will not disintegrate from the action of air, water, or the conditions of handling and placing; and,
- d. clean and free from earth, clay, refuse, or adherent coatings.
- e. Ungrouted Stone: Ungrouted stone shall be angular quarried material, with a shape which assures interlocking with adjacent stone, and with the greatest dimension of each piece not greater than 3 times the least dimension.
- f. Stone for Grouted Stone: Stone for grouted stone protection may be either rounded stone or angular quarried material, with a shape

which assures reasonable adhesion with cement grout, yet allows flow of grout throughout the layer, to ensure adequate bonding. The greatest dimension of each piece shall be not greater than 3 times the least dimension.

- g. Bedding Material or Filter Stone: Bedding material or filter stone obtained from an authorized source shall meet all the requirements specified herein, but shall have a percentage of wear not to exceed 45 percent, when tested in accordance with ASTM C 131.

#### 2.1.5 Gradation

##### 2.1.5.1 General

All points on individual grading curves shall be between the boundary limits, as defined by smooth curves, drawn through specified grading limits and plotted on a mechanical analysis diagram. The individual grading curves shall not exhibit abrupt changes in slope, denoting skip-grading or scalping of certain sizes. Specified grading of all material shall be met both at the source and as-delivered to the project. In addition, material not meeting the required grading, because of segregation or degradation during placement, shall be rejected. If test results show that stone does not meet the required grading, the hauling operation will be stopped immediately and will not resume, until processing procedures are adjusted, and a gradation test is completed, showing that gradation requirements are met. All gradation tests shall be at the expense of the Contractor.

- a. Stone for Riprap and Grouted Stone: Stone for grouted stone shall be reasonably well-graded and within the limits specified below when tested in accordance with ASTM D 5519, Test Method A. Salvaged stone shall be acceptable for grouted stone provided that not more than 5 percent is less than 5 pounds by weight.

Size of Individual Pieces (inches)	Percent Smaller (by weight)
15	100
12	50-100
10	15-50
8	0-15
#4 Sieve	0

- b. Bedding Material: Bedding material shall be well-graded, between the limits specified below, when tested in accordance with ASTM C 136.

Sieve Size	Percent Finer (by weight)
1-1/2 inch	100
3/4 inch	55-85
3/8 inch	8-20
No. 4	0-5

Sieve Size	Percent Finer (by weight)
No. 200	0-2

#### 2.1.5.2 Gradation Sampling and Testing

Testing shall be the responsibility of the Contractor and shall be performed at no additional cost to the Government. Tests shall be performed by an approved testing laboratory, on samples selected by the Contracting Officer's Representative. Testing may be done by the Contractor, subject to approval by the Contracting Officer's Representative. If the Contractor elects to establish testing facilities, approval of such facilities shall be based on compliance with ASTM E 548, and no work requiring testing will be permitted, until the Contractor's facilities have been inspected and approved by the Contracting Officer's Representative. Testing shall be supervised by a registered Civil Engineer, experienced in rock-testing. The Government reserves the right to perform check-tests and to use the Contractor's sampling and testing facilities to make the tests. One gradation test shall be required at the beginning of production, prior to delivery of stone from the source to the project site. A minimum of one additional test shall be required for each 5000 tons of stone placed. Each sample shall consist of not less than 5 tons of stone, selected at random from the production run for the first test or from stone placed on grade or stockpiled on-site for required additional tests. All sampling and gradation tests performed by the Contractor shall be observed by the Contracting Officer's Representative.

#### 2.1.6 Rejected Stone

Stone of unsuitable quality and/or size distribution, as required by these specifications, shall be rejected. Any rejected stone shall be promptly removed from the project, at no expense to the Government. Any portions of the work covered by these specifications containing rejected stone will be considered incomplete.

### PART 3 EXECUTION

#### 3.1 FOUNDATION PREPARATION

##### 3.1.1 General

Subgrade preparation for material placement shall conform to the provisions of SECTION 02300 EARTHWORK. Areas on which bedding material or stone is to be placed shall be trimmed and dressed to conform to cross-sections, indicated or directed, within an allowable tolerance of plus or minus 1 inch from the theoretical slope-lines and grades. Where such areas are below the allowable minus tolerance limit, they shall be brought to grade by filling with earth, similar to the adjacent material and well-compacted, or by filling with approved material, and no additional payment will be made for any material thus required. Immediately prior to placing the bedding material, the prepared base shall be inspected by the Contracting Officer's Representative, and no material shall be placed thereon, until that area has been approved.

### 3.2 PLACEMENT

#### 3.2.1 General

Except as otherwise specified, the limits of stone in place shall follow, with reasonable variation, the indicated lines and slopes, without continuous under- or overbuilding. Templates shall be placed at adequate intervals, as determined by the Contracting Officer's Representative, to accurately delineate the surface of the work being placed. For all stonework, the Contractor shall submit the method of placement to the Contracting Officer's Representative for approval, before placement begins.

#### 3.2.2 Bedding Material

Bedding material shall be spread uniformly on the prepared base, in a satisfactory manner, to the neat lines indicated or directed. Placing of material by methods which will tend to segregate particle sizes will not be permitted. Material shall not be dropped from a height of more than 18 inches. Any damage to the prepared surface of the base, during placing of the bedding material shall be repaired, before proceeding with the work. Compaction of the bedding material will not be required, but it shall be finished, to present a reasonably even surface, free from mounds or windrows. A tolerance of plus or minus 1 inch from the slope-lines and grades, when measured with a 10-foot straight edge, will be allowed in each finished course, except that either extreme of such tolerance shall not be continuous over an area greater than 200 square feet.

#### 3.2.3 Riprap

Riprap shall be placed in a manner to produce a reasonably well-graded mass, with the minimum practicable percentage of voids, and shall be constructed to the lines and grades indicated or directed. Stone shall be placed to its full course thickness, in one operation, from the bottom of the slope or lowest portion requiring placement, to the top of the slope and in a manner to avoid displacing the underlying material. Material shall not be dropped from a height of more than 18 inches. Method of placement shall be submitted to the Contracting Officer's Representative, for approval, prior to commencement of placement operations. The Contractor shall maintain the stone protection until accepted, and any material displaced by any cause, shall be replaced, at his expense, to the lines and grades shown on the drawings. Self-propelled equipment shall not be used on the embankment slopes. Hand-placing, barring, or placing by crane will be required only to the extent necessary, to secure the results specified. Placing stone by dumping into chutes or by similar methods, likely to cause segregation, will not be permitted. A tolerance of minus 2 to plus 2 inches from the indicated slope-lines and grades will be allowed in the finished surface, except that either extreme of such tolerance shall not be continuous over an area greater than 200 square feet.

#### 3.2.4 Stone for Grouted Stone

Stone for grouted stone shall be placed in such a manner to produce a reasonably well-graded mass and to insure that all individual stones can be satisfactorily embedded in grout. Method of placement shall be submitted

to Contracting Officer's Representative, for approval, prior to commencement of placement operations. Stone shall be placed to its full course thickness, in one operation, and in such a manner to avoid displacing the underlying material. Material shall not be dropped from a height of more than 18 inches. The Contractor shall maintain the stone protection until accepted, and any material displaced by any cause shall be replaced at his expense, to the lines and grades indicated. Self-propelled equipment shall not be used on the slopes. Hand-placing, barring, or placing by crane will be required only to the extent necessary, to secure the results specified. Placing stone by dumping into chutes or by similar methods, likely to cause segregation will not be permitted. A tolerance of minus 2 to plus 2 inches, from the indicated slope-lines and grades will be allowed in the finished surface, except that either extreme of such tolerance shall not be continuous over an area greater than 200 square feet. Use of thin, flat stones will not be permitted.

### 3.3 DELIVERY

All stone delivered by rail or truck shall be weighed, and the scale tickets shall be certified, by authorized weighers. All railroad cars and trucks used for delivering stone shall be plainly numbered.

#### 3.3.1 Scales

Scales used for measurement shall, at the option of the Contractor, be either public scales or approved scales, provided by the Contractor. Weighing shall be at the point nearest the work at which the public scale is available or at which it is practicable for the Contractor to provide a scale. Scales shall be standard truck scales of the beam type. The scales shall be of sufficient size and capacity to accommodate all trucks used in hauling the material. Scales shall be tested, approved, and sealed by an inspector of the State Inspection Bureau, charged with scales inspection, within the state in which the project is located. Scales shall be calibrated and resealed as often as necessary, to insure continuous accuracy. The necessary number of standard weights for testing the scales shall be on hand at all times, and, if an official inspection bureau of the state is not available, the scales will be tested by the Contracting Officer's Representative.

#### 3.3.2 Waybills and Delivery Tickets

Copies of waybills or delivery tickets shall be submitted to the Contracting Officer's Representative, during the progress of the work. The Contractor shall furnish the Contracting Officer's Representative scale tickets for each load of material weighed; these tickets shall include tare weight, identification mark of each vehicle weighed, plus date, time, and location of the loading. Tickets shall be furnished at the point and time individual loads arrive at the work site. A master log of all vehicle loading shall be furnished for each day of loading operation. The Contractor shall file with the Contracting Officer's Representative the master log of loadings, certified waybills and/or certified tickets, within 24 hours of material delivery. Prior to the final payment, the Contractor shall furnish written certification that the material recorded on the submitted waybills and/or certified tickets was actually used in the

construction covered by the contract.

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## SECTION 02650

## GROUTING STONE PROTECTION

## PART 1 GENERAL

## 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

## ASTM INTERNATIONAL (ASTM)

ASTM C 33	(2002a) Concrete Aggregates
ASTM C 143	(1998) Slump of Hydraulic Cement Concrete
ASTM C 150	(2002) Portland Cement
ASTM C 172	(1999) Sampling Freshly Mixed Concrete
ASTM C 309	(1998a) Liquid Membrane-Forming Compounds for Curing Concrete
ASTM C 494	(1992) Chemical Admixtures for Concrete

## 1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The "RE" designates that the Resident Office will review the submittal for the Government. Submit the following in accordance with Section 01330, SUBMITTAL PROCEDURES:

## SD-05 Design Data

## Grout Mix Design.

Fifteen days prior to placement of grout, the contractor shall submit to the Contracting Officer the detailed mixture proportions for the specified grout.

## SD-06 Test Reports

## Aggregates.

Thirty days prior to placement of grout, the contractor shall submit to the Contracting Officer the reports of aggregate quality tests.

## SD-07 Certificates

#### Portland Cement.

Certificates of compliance attesting that the concrete materials meet the requirements of the specifications shall be submitted to the Contracting Officer. Cement will be accepted on the basis of a manufacturer's certificate of compliance, accompanied by mill test reports that the material meets the requirements of the specifications under which it is furnished.

#### Curing Materials.

Certificates of compliance attesting that the curing materials meet the requirements of the specifications shall be submitted to the Contracting Officer. Curing materials will be accepted on the basis of a manufacturer's certificate of compliance.

#### Waybills and Delivery Tickets.

Copies of waybills or delivery tickets for materials during the progress of the work shall be submitted for review. Before the final payment is allowed, waybills and certified delivery tickets shall be furnished for all material used in the construction.

### 1.3 PROTECTION OF COMPLETED WORK

After completion of any panel, no workman or other load shall be permitted on the grouted surface for a period of 24 hours. The grouted surface shall be protected from injurious action of the sun; shall be protected from rain, flowing water, and mechanical injury and shall be moist cured or membrane cured at the Contractor's option.

### 1.4 DELIVERY, STORAGE, AND HANDLING OF MATERIALS

#### 1.4.1 Aggregates

Aggregates shall be delivered to the site of the grout batching and mixing plant and stockpiled in such manner as to preclude intermingling of different materials or the inclusion of foreign materials in the stockpiles or batching operations. Sufficient aggregates shall be maintained at the site at all times to permit continuous placement and completion of any lift or section of grout started.

#### 1.4.2 Portland Cement

Cement may be supplied in bulk or in bags. When transported in a bulk form the carriers and systems for distribution of the cement will be accomplished in adequately designed weather-tight trucks, conveyors, or other means that will protect the material from exposure to moisture. All storage facilities shall permit easy access for inspection and identification. Sufficient materials shall be in storage to complete any placement of grout started.

### 1.5 ACCESS TO PLANT AND EQUIPMENT

The Contracting Officer shall have access at all times to all parts of the placing operation and grout production plant for checking the adequacy of the equipment in use; inspecting operation of the plant; verifying weights, proportions, and character of materials; and installation of the grout and application of curing materials.

## PART 2 MATERIALS

### 2.1 AGGREGATE

Aggregates shall conform to the requirements specified for fine aggregate of the SECTION 03307 CONCRETE FOR MINOR STRUCTURES.

#### 2.1.1 Fine Aggregate Gradation

Fine aggregate shall conform to the gradation requirements of ASTM C 33 for Fine Aggregate.

#### 2.1.2 Coarse Aggregate Gradation

Coarse aggregate shall conform to the following gradation:

Sieve Designation	Cumulative Percentage By Weight Passing
1/2 inch	100
3/8 inch	85-100
No. 4	10-30
No. 8	0-10
No. 16	0-5

### 2.2 PORTLAND CEMENT

Portland cement shall conform to the requirements of ASTM C 150, Type II. The alkali content of the cement shall not exceed 0.6 percent.

### 2.3 WATER

Water shall be fresh, clean, and potable.

### 2.4 CURING MATERIALS

#### 2.4.1 MEMBRANE CURING COMPOUND

Membrane curing compound shall conform to ASTM C 309, Type 1-D, Class B. Non-pigmented compound shall contain a fugitive dye. The loss of water for both pigmented and non-pigmented curing compound when tested shall be not more than 0.03 pounds per square foot in 24 hours nor more than 0.09 pounds per square foot in 72 hours. In hot weather, grout cured with non-pigmented curing compound shall be shaded from the direct rays of the sun for the first 3 days of the curing period.

### 2.5 Riprap or Stone

Riprap or stone shall conform to the requirements of Section 02600, STONE PROTECTION.

### PART 3 EXECUTION

#### 3.1 MIXING

Grout Mix Design: Grout shall be composed of cement, sand, and water. The cement content requirement per cubic yard of grout shall be 7-1/2 sacks. The water content of the mix shall not exceed 8-1/2 gallons per sack of cement. In calculating total water content of the mix, the amount of moisture carried on the surfaces of aggregate particles shall be included. Slump of grout mix shall be 7 inches. Alterations of slump to produce adequate penetration between the stone voids shall be determined by the Contracting Officer in the field during the placement of the demonstration section. The grout shall be mixed in a concrete mixer in the manner specified for concrete, except that time of mixing shall be as long as is required to produce a satisfactory mixture. The grout shall be used in the work within a period of 30 minutes after mixing. Retempering of grout will not be permitted. The consistency of the grout shall be such as to permit gravity flow into the interstices of the stones with the help of spading, rodding, and brooming. Grout batches in the same course shall be uniform in mix, size, and consistency.

#### 3.2 PLACING

##### 3.2.1 Demonstration Section

The Contractor shall provide a demonstration section of the stonework as indicated in SECTION 02600 STONE PROTECTION prior to the grouted stone production.

##### 3.2.2 Prior to Grouting

Prior to grouting, the stone shall be thoroughly washed with water to wash down the fines and to prevent the stone from absorbing water from the grout. The stone shall be kept wet just ahead of the actual placing of grout. Existing stone protection to be grouted shall be cleaned of all soil, vegetation, and debris to a minimum depth of 12 inches prior to washing.

##### 3.2.3 Transportation and Placement

The grout shall be used in the work within a period of 30 minutes after mixing. The grout shall be brought to the place of final deposit by approved means and discharged directly on the stone or prepared surface with a concrete pump. The use of a concrete chute in placing grout will not be allowed. The grout shall be placed in one course for both invert and side slopes. Grout shall be placed from the toe of slope to the top of side slope and shall fully penetrate the stone blanket. A splash plate of metal or wood shall be used where necessary to prevent displacement of stone directly under discharge. The flow of grout into the stone voids shall be controlled by the grout operator to assure that all voids are

adequately penetrated. When necessary, grout shall be directed with brooms or other approved baffles to cover the entire area and stone voids. Sufficient barring shall be done to loosen tight pockets of stone and otherwise aid the penetration of grout. The course shall fully penetrate the stone blanket.

#### 3.2.4 Surface Finishing

Except for smooth ramp surfaces, placement and brooming of the grouted surface shall be such that the outer layer of rock projects 1/3 to 1/4 their diameter above the grouted surface. After the top course has stiffened the entire surface shall be rebroomed to eliminate runs in the top course and to fill voids caused by sloughing of the layers of grout. On side slopes, all brooming shall be uphill.

#### 3.2.5 Protection

After completion of any strip or panel, no workmen or other load shall be permitted on the grouted surface for a period of 24 hours. The grouted surface shall be protected from injurious action of the sun; shall be protected from rain, flowing water, and mechanical injury; and shall be moist cured or membrane cured at the Contractor's option.

### 3.3 WEATHER LIMITATIONS

#### 3.3.1 Hot Weather Placing

The temperature of the grout when deposited in the proper location shall not exceed 85 degrees F except as directed by the Contracting Officer.

#### 3.3.2 Cold Weather Placing

No grout shall be prepared except when the air temperature is at least 40 degrees F in the shade and rising. Materials entering the mixer shall be free from ice, snow, and frozen lumps. A non-chloride based accelerating admixture, conforming to the requirements of ASTM C 494, may be used when approved in advance, by the Contracting Officer.

### 3.4 CURING AND PROTECTION

Curing of the grouted surface shall be accomplished by the following methods.

#### 3.4.1 Moist Curing

Moist curing shall consist of covering the grout with a uniform thickness of 6 inches of sand that shall be kept continuously saturated for a period of 14 days.

#### 3.4.2 Curing Compounds

After final brooming, curing compounds shall be applied as soon as the free water disappears and shall be applied in a 2-coat continuous operation by approved power-spraying equipment at a rate of not to exceed 200 square

feet per gallon for the combined coats. The second coat shall be applied to overlap the first coat in a direction approximately at right angles to the direction of the first application.

### 3.5 CONTRACTOR QUALITY CONTROL

#### 3.5.1 General

The individuals who sample and test grout as required in this specification shall have demonstrated a knowledge and ability to perform the necessary test procedures equivalent to the ACI minimum guidelines for certification of Concrete Field Testing Technicians, Grade I.

#### 3.5.2 Inspection Details and Frequency of Testing

##### 3.5.2.1 Preparations for Placing

Stone and embedded items shall be inspected in sufficient time prior to each grout placement by the Contractor to certify to the Contracting Officer that it is ready to receive grout.

##### 3.5.2.2 Slump

Slump shall be checked at least twice during each shift that grout is produced. Samples shall be obtained in accordance with ASTM C 172 and tested in accordance with ASTM C 143.

##### 3.5.2.3 Consolidation and Protection

The Contractor shall ensure that the grout is properly installed, finished, protected, and cured.

#### 3.5.3 Action Required

##### 3.5.3.1 Placing

The placing foreman shall not permit placing to begin until he has verified that there is an adequate number of men with appropriate bars and other such tools are available for the necessary barring and adjustment of stone as required above.

##### 3.5.3.2 Slump

Whenever a test is outside the specification limits, the results of the test shall be reported to the Contracting Officer and another test shall be immediately taken. If the results of the subsequent test indicates that the slump is not being met. The placement will cease and the contractor will readjust the mix design to achieve the proper slump. The adjusted mix will continue to meet the requirements specified above.

#### 3.5.4 Reports

The results of all tests and inspections conducted at the project site shall be reported informally at the end of each shift and in writing weekly



and shall be delivered to the Contracting Officer within 3 days after the end of each weekly reporting period.

### 3.6 Waybills and Delivery Tickets

Copies of waybills or delivery tickets shall be submitted to the Contracting Officer's Representative, during the progress of the work. The Contractor shall furnish the Contracting Officer's Representative scale tickets for each load of material weighed; these tickets shall include tare weight, identification mark of each vehicle weighed, plus date, time, and location of the loading. Tickets shall be furnished at the point and time individual loads arrive at the work site. A master log of all vehicle loading shall be furnished for each day of loading operation. The Contractor shall file with the Contracting Officer's Representative the master log of loadings, certified waybills and/or certified tickets, within 24 hours of material delivery. Prior to the final payment, the Contractor shall furnish written certification that the material recorded on the submitted waybills and/or certified tickets was actually used in the construction covered by the contract.

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## SECTION 02722

## AGGREGATE BASE COURSE

## PART 1 GENERAL

## 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

## ASTM INTERNATIONAL (ASTM)

ASTM C 117	(1995) Materials Finer Than 75 micrometer (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C 127	(2001) Density, Relative Density (Specific Gravity), and Absorption of Coarse Aggregate
ASTM C 128	(2001) Density, Relative Density (Specific Gravity), and Absorption of Fine Aggregate
ASTM C 131	(2001) Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C 136	(2001) Sieve Analysis of Fine and Coarse Aggregates
ASTM D 75	(1997) Sampling Aggregates
ASTM D 422	(1963; R 1998) Particle-Size Analysis of Soils
ASTM D 1556	(2000) Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D 1557	(2000) Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/cu. ft. (2,700 kN-m/cu.m.))
ASTM D 2487	(2000) Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D 4318	(2000) Liquid Limit, Plastic Limit, and Plasticity Index of Soils

ASTM E 11 (2001) Wire Cloth and Sieves for Testing  
Purposes

## 1.2 DEFINITIONS

For the purposes of this specification, the following definitions apply.

### 1.2.1 Aggregate Base Course

Aggregate base course (ABC) is well graded, durable aggregate uniformly moistened and mechanically stabilized by compaction.

### 1.2.2 Degree of Compaction

Degree of compaction shall be expressed as a percentage of the maximum density obtained by the test procedure presented in ASTM D 1557.

## 1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The "RE" designates that the Resident Office will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

### SD-03 Product Data

Plant, Equipment, and Tools.

List of proposed equipment to be used in performance of construction work, including descriptive data.

### Waybills and Delivery Tickets

Copies of waybills and delivery tickets during the progress of the work. Before the final statement is allowed, the Contractor shall file certified waybills and certified delivery tickets for all aggregates actually used.

### SD-06 Test Reports

Sampling and testing.

Field Density Tests.

Calibration curves and related test results prior to using the device or equipment being calibrated. Copies of field test results within 24 hours after the tests are performed. Certified copies of test results for approval not less than 30 days before material is required for the work.

## 1.4 SAMPLING AND TESTING

Sampling and testing shall be the responsibility of the Contractor.

Sampling and testing shall be performed by a testing laboratory approved in accordance with Section 01451 CONTRACTOR QUALITY CONTROL. Work requiring testing will not be permitted until the testing laboratory has been inspected and approved. The materials shall be tested to establish compliance with the specified requirements; testing shall be performed at the specified frequency. The Contracting Officer may specify the time and location of the tests. Copies of test results shall be furnished to the Contracting Officer within 24 hours of completion of the tests.

#### 1.4.1 Sampling

Samples for laboratory testing shall be taken in conformance with ASTM D 75.

When deemed necessary, the sampling will be observed by the Contracting Officer.

#### 1.4.2 Tests

The following tests shall be performed in conformance with the applicable standards listed.

##### 1.4.2.1 Sieve Analysis

Sieve analysis shall be made in conformance with ASTM C 117 and ASTM C 136.

Sieves shall conform to ASTM E 11. Particle-size analysis of the soils shall also be completed in conformance with ASTM D 422.

##### 1.4.2.2 Liquid Limit and Plasticity Index

Liquid limit and plasticity index shall be determined in accordance with ASTM D 4318.

##### 1.4.2.3 Moisture-Density Determinations

The maximum density and optimum moisture content shall be determined in accordance with ASTM D 1557.

##### 1.4.2.4 Field Density Tests

Density shall be field measured in accordance with ASTM D 1556. For the method presented in ASTM D 1556 the base plate as shown in the drawing shall be used.

##### 1.4.2.5 Wear Test

Wear tests shall be made on ABC coarse material in conformance with ASTM C 131.

##### 1.4.2.6 Fractured Faces

The percentage fractured faces will be determined in accordance with CALTRANS STANDARDS or U.S. Army Corps of Engineers Geotechnical Branch, Attn: Mr. Francis Omoregie (213) 452-3599, and recorded.

#### 1.4.3 Testing Frequency

#### 1.4.3.1 Initial Tests

One of each of the following tests shall be performed on the proposed material prior to commencing construction to demonstrate that the proposed material meets all specified requirements when furnished. If materials from more than one source are going to be utilized, this testing shall be completed for each source.

- a. Sieve Analysis.
- b. Liquid limit and plasticity index.
- c. Moisture-density relationship.
- d. Abrasion Loss (ASTM C 131).
- e. Fractured Faces.

#### 1.4.3.2 In Place Tests

Each of the following tests shall be performed on samples taken from the placed and compacted ABC. Samples shall be taken and tested at the rates indicated.

- a. Density tests shall be performed on every lift of material placed and at a frequency of one set of tests for every 600 square yards, or portion thereof, of completed area.
- b. Sieve Analysis shall be performed for every 1100 tons, or portion thereof, of material placed.
- c. Liquid limit and plasticity index, abrasion loss and fractured faces tests shall be performed at the same frequency as the sieve analysis.

#### 1.4.4 Approval of Material

The source of the material shall be selected 15 days prior to the time the material will be required in the work. Tentative approval of material will be based on initial test results. Final approval of the materials will be based on sieve analysis, liquid limit, and plasticity index tests performed on samples taken from the completed and fully compacted ABC.

#### 1.5 WEATHER LIMITATIONS

Construction shall be done when the atmospheric temperature is above 35 degrees F. When the temperature falls below 35 degrees F, the Contractor shall protect all completed areas by approved methods against detrimental effects of freezing. Completed areas damaged by freezing, rainfall, or other weather conditions shall be corrected to meet specified requirements.

#### 1.6 PLANT, EQUIPMENT, AND TOOLS

All plant, equipment, and tools used in the performance of the work will be



subject to approval before the work is started and shall be maintained in satisfactory working condition at all times. The equipment shall be adequate and shall have the capability of producing the required compaction, meeting grade controls, thickness control, and smoothness requirements as set forth herein.

## PART 2 PRODUCTS

### 2.1 AGGREGATES

The ABC shall consist of clean, sound, durable particles of stone, crushed stone, gravel, crushed gravel, angular sand, or other approved material. ABC shall be free of lumps of clay, organic matter, and other objectionable materials or coatings. The portion retained on the No. 4 sieve shall be known as coarse aggregate; that portion passing the No. 4 sieve shall be known as fine aggregate.

#### 2.1.1 Coarse Aggregate

Only one type of coarse aggregate shall be used on the project. Coarse aggregate shall not show more than 45 percent loss when subjected to the Los Angeles abrasion test in accordance with ASTM C 131. The amount of flat and elongated particles shall not exceed 30 percent. A flat particle is one having a ratio of width to thickness greater than 3; an elongated particle is one having a ratio of length to width greater than 3.

#### 2.1.2 Fine Aggregate

Fine aggregates shall be angular particles of uniform density. When the fine aggregate is supplied from more than one source, aggregate from each source shall meet the specified requirements.

#### 2.1.3 Gradation Requirements

The specified gradation requirements shall apply to the completed base course. The aggregates shall have a maximum size of 1 inch and shall be continuously well graded within the limits specified in TABLE 1. Sieves shall conform to ASTM E 11.

TABLE I. GRADATION OF AGGREGATES

Percentage by Weight Passing Square-Mesh Sieve

Sieve Designation	(TYPE II)/ No. 2
-----	
2 inch	----
1-1/2 inch	100
1 inch	60-100
1/2 inch	30-65
No. 4	20-50
No. 10	15-40

TABLE I. GRADATION OF AGGREGATES

Percentage by Weight Passing Square-Mesh Sieve

Sieve Designation	(TYPE II)/ No. 2
-----	
No. 40	5-25
No. 200	0-8

NOTE 1: Particles having diameters less than 0.0008 inch shall not be in excess of 3 percent by weight of the total sample tested.

NOTE 2: The values are based on aggregates of uniform specific gravity. If materials from different sources are used for the coarse and fine aggregates, they shall be tested in accordance with ASTM C 127 and ASTM C 128 to determine their specific gravities. If the specific gravities vary by more than 10 percent, the percentages passing the various sieves shall be corrected as directed by the Contracting Officer.

#### 2.1.4 Liquid Limit and Plasticity Index

Liquid limit and plasticity index requirements shall apply to the completed course and shall also apply to any component that is blended to meet the required gradation. The portion of any component or of the completed course passing the No. 40 sieve shall be either nonplastic or have a liquid limit not greater than 35 and a plasticity index not greater than 5.

### PART 3 EXECUTION

#### 3.1 GENERAL REQUIREMENTS

When the ABC is constructed in more than one layer, the previously constructed layer shall be cleaned of loose and foreign matter by sweeping with power sweepers or power brooms, except that hand brooms may be used in areas where power cleaning is not practicable. Adequate drainage shall be provided during the entire period of construction to prevent water from collecting or standing on the working area. Line and grade stakes shall be provided as necessary for control. Grade stakes shall be in lines parallel to the centerline of the area under construction and suitably spaced for string lining.

#### 3.2 OPERATION OF AGGREGATE SOURCES

Aggregate sources shall be cleared, stripped and excavated to working depths producing excavation faces that are as nearly vertical as practicable for the materials being excavated. Strata of unsuitable materials overlying or occurring in the deposit shall be wasted. Methods of operating aggregate sources, and the processing and blending of the materials, shall be changed or modified if necessary to obtain material conforming to the specified requirements. Upon completion of the work, aggregate sources shall be conditioned to drain readily and be left in a

satisfactory condition.

### 3.3 STOCKPILING MATERIAL

Prior to stockpiling of material, storage sites shall be cleared and leveled by the Contractor. All materials, including approved material available from excavation and grading, shall be stockpiled in the manner and at the locations designated. Aggregates shall be stockpiled on the cleared and leveled areas designated by the Contracting Officer to prevent segregation. Materials obtained from different sources shall be stockpiled separately. Waybills and Delivery tickets are required for each load.

### 3.4 PREPARATION OF UNDERLYING COURSE

Prior to constructing the ABC, the underlying course or subgrade shall be cleaned of all foreign substances. At the time of construction of the ABC, the underlying course shall contain no frozen material. The surface of the underlying course or subgrade shall meet specified compaction and surface tolerances. The underlying course shall conform to Section 02300 EARTHWORK. Ruts or soft yielding spots in the underlying courses, areas having inadequate compaction, and deviations of the surface from the requirements set forth herein shall be corrected by loosening and removing soft or unsatisfactory material and by adding approved material, reshaping to line and grade, and recompacting to specified density requirements. For cohesionless underlying courses containing sands or gravels, as defined in ASTM D 2487, the surface shall be stabilized prior to placement of the ABC.

Stabilization shall be accomplished by mixing ABC into the underlying course and compacting by approved methods. The stabilized material shall be considered as part of the underlying course and shall meet all requirements of the underlying course. The finished underlying course shall not be disturbed by traffic or other operations and shall be maintained by the Contractor in a satisfactory condition until the ABC is placed.

### 3.5 INSTALLATION

#### 3.5.1 Mixing the Materials

The coarse and fine aggregates shall be mixed in a stationary plant. The Contractor shall make adjustments in mixing procedures or in equipment as directed to obtain true grades, to minimize segregation or degradation, to obtain the required water content, and to insure a satisfactory ABC meeting all requirements of this specification.

#### 3.5.2 Placing

The mixed material shall be placed on the prepared subgrade or subbase in layers of uniform thickness with an approved spreader. When a compacted layer 6 inches or less in thickness is required, the material shall be placed in a single layer. When a compacted layer in excess of 6 inches is required, the material shall be placed in layers of equal thickness. No layer shall exceed 6 inches or less than 3 inches when compacted. The layers shall be so placed that when compacted they will be true to the grades or levels required with the least possible surface disturbance.

Where the ABC is placed in more than one layer, the previously constructed layers shall be cleaned of loose and foreign matter by sweeping with power sweepers, power brooms, or hand brooms, as directed. Such adjustments in placing procedures or equipment shall be made as may be directed to obtain true grades, to minimize segregation and degradation, to adjust the water content, and to insure an acceptable ABC.

#### 3.5.3 Grade Control

The finished and completed ABC shall conform to the lines, grades, and cross sections shown. Underlying material(s) shall be excavated and prepared at sufficient depth for the required ABC thickness so that the finished ABC with the subsequent surface course will meet the designated grades.

#### 3.5.4 Edges of Base Course

Approved fill material shall be placed along the outer edges of ABC in sufficient quantities to compact to the thickness of the course being constructed, or to the thickness of each layer in a multiple layer course, allowing in each operation at least a 24 inches width of this material to be rolled and compacted simultaneously with rolling and compacting of each layer of ABC. If this base course material is to be placed adjacent to another pavement section, then the layers for both of these sections shall be placed and compacted along this edge at the same time.

#### 3.5.5 Compaction

Each layer of the ABC shall be compacted as specified with approved compaction equipment. Water content shall be maintained during the compaction procedure to within plus or minus 2 percent of the optimum water content determined from laboratory tests as specified in paragraph SAMPLING AND TESTING. Rolling shall begin at the outside edge of the surface and proceed to the center, overlapping on successive trips at least one-half the width of the roller. Alternate trips of the roller shall be slightly different lengths. Speed of the roller shall be such that displacement of the aggregate does not occur. In all places not accessible to the rollers, the mixture shall be compacted with hand-operated power tampers. Compaction shall continue until each layer has a degree of compaction that is at least 100 percent of laboratory maximum density through the full depth of the layer. The Contractor shall make such adjustments in compacting or finishing procedures as may be directed to obtain true grades, to minimize segregation and degradation, to reduce or increase water content, and to ensure a satisfactory ABC. Any materials that are found to be unsatisfactory shall be removed and replaced with satisfactory material or reworked, as directed, to meet the requirements of this specification.

#### 3.5.6 Thickness

Compacted thickness of the aggregate course shall be as indicated. No individual layer shall exceed 6 inches nor be less than 3 inches compacted thickness. The total compacted thickness of the ABC course shall be within 1/2 inch of the thickness indicated. Where the measured thickness is more

than 1/2 inch deficient, such areas shall be corrected by scarifying, adding new material of proper gradation, reblading, and recompacting as directed. Where the measured thickness is more than 1/2 inch thicker than indicated, the course shall be considered as conforming to the specified thickness requirements. Average job thickness shall be the average of all thickness measurements taken for the job, but shall be within 1/4 inch of the thickness indicated. The total thickness of the ABC course shall be measured at intervals in such a manner as to ensure one measurement for each 600 square yards of base course. Measurements shall be made in 3 inch diameter test holes penetrating the base course.

#### 3.5.7 Finishing

The surface of the top layer of ABC shall be finished after final compaction by cutting any overbuild to grade and rolling with a steel-wheeled roller. Thin layers of material shall not be added to the top layer of base course to meet grade. If the elevation of the top layer of ABC is 1/2 inch or more below grade, then the top layer should be scarified to a depth of at least 3 inches and new material shall be blended in and compacted to bring to grade. Adjustments to rolling and finishing procedures shall be made as directed to minimize segregation and degradation, obtain grades, maintain moisture content, and insure an acceptable base course. Should the surface become rough, corrugated, uneven in texture, or traffic marked prior to completion, the unsatisfactory portion shall be scarified, reworked and recompact or it shall be replaced as directed.

#### 3.5.8 Smoothness

The surface of the top layer shall show no deviations in excess of 3/8 inch when tested with a 10 foot straightedge. Measurements shall be taken in successive positions parallel to the centerline of the area to be paved. Measurements shall also be taken perpendicular to the centerline at 50 foot intervals. Deviations exceeding this amount shall be corrected by removing material and replacing with new material, or by reworking existing material and compacting it to meet these specifications.

#### 3.6 TRAFFIC

Completed portions of the ABC course may be opened to limited traffic, provided there is no marring or distorting of the surface by the traffic. Heavy equipment shall not be permitted except when necessary to construction, and then the area shall be protected against marring or damage to the completed work.

#### 3.7 MAINTENANCE

The ABC shall be maintained in a satisfactory condition until the full pavement section is completed and accepted. Maintenance shall include immediate repairs to any defects and shall be repeated as often as necessary to keep the area intact. Any ABC that is not paved over prior to the onset of winter, shall be retested to verify that it still complies with the requirements of this specification. Any area of ABC that is damaged shall be reworked or replaced as necessary to comply with this

specification.

3.8 DISPOSAL OF UNSATISFACTORY MATERIALS

Any unsuitable materials that must be removed shall be disposed of as directed. No additional payments will be made for materials that must be replaced.

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SECTION 02722A

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## SECTION 02722A

## DECOMPOSED GRANITE

## PART 1 GENERAL

## 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

## ASTM INTERNATIONAL (ASTM)

ASTM C 117	(1995) Materials Finer Than 75 micrometer (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C 136	(2001) Sieve Analysis of Fine and Coarse Aggregates
ASTM D 75	(1997) Sampling Aggregates
ASTM D 4318	(2000) Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM E 11	(2001) Wire Cloth and Sieves for Testing Purposes

## 1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-06 Test Reports

## SAMPLING AND TESTING

For laboratory testing methods and results.

Sample

For consistency, grading, and color.

## PART 2 PRODUCTS

## 2.1 DECOMPOSED GRANITE



### 2.1.1 Consistency

- a. Decomposed (disintegrated) granite shall be free from lumps, balls of clay, organic matter, deleterious substances, and other objectionable matter and shall be of such nature that it can be compacted readily under watering and rolling to form a firm, stable base.
- b. Decomposed granite shall be any igneous rock which has been weathered in place, or any sedimentary material principally derived from igneous rock.

### 2.1.2 Grading

Decomposed (disintegrated) granite shall have a maximum particle size of three-quarter inches (3/4"). Not more than fifteen percent (15%) by weight shall pass the No. 200 sieve. The portion of material passing the No. 40 sieve shall have a plasticity index less than nine (9).

### 2.1.3 Color

Color of decomposed granite shall be coordinated with the City of Temecula.

## 2.2 SAMPLING AND TESTING

### 2.2.1 Responsibility

Sampling and testing shall be the responsibility of the Contractor. Sampling and testing shall be performed by an approved commercial testing laboratory, or by the Contractor subject to approval of the Contracting Officer. Tests shall be performed in sufficient number to insure that materials meet specified requirements. Copies of test results shall be furnished to Contracting Officer 14 days prior to start of work.

### 2.2.2 Sample

Samples for material gradation and plastic-limit tests shall be taken in conformance with ASTM D 75. When deemed necessary, the sampling shall be observed by the Contracting Officer.

### 2.2.3 Testing

- a. Sieve Analyses shall be made in conformance with ASTM C 117 and ASTM C 136. Sieves shall conform to ASTM E 11.
- b. Liquid limit and plasticity index shall be determined in accordance with ASTM D 4318.
- c. Field-In Place Density shall be determined in accordance with the requirements of SECTION 02316 EXCAVATION, TRENCHING, AND BACKFILLING FOR UTILITIES SYSTEMS. At least one (1) density test shall be made every five-hundred lineal feet (500') of surfacing.

### PART 3 EXECUTION

#### 3.1 PREPARATION OF SUBGRADE

Prior to placing the decomposed granite surfacing, the subgrade shall be cleaned of all foreign substances. Ruts or soft, yielding spots that may appear in subgrade, areas having inadequate compaction, and deviations of the surface from requirements set forth therein shall be corrected by loosening, removing, and by adding approved material, reshaping to line and grade, and recompacting to specified density requirements and as approved by the Contracting Officer.

#### 3.2 INSTALLATION

##### 3.2.1 WEED ABATEMENT AND SOIL TREATMENT

##### 3.2.2 Herbicide

Contractor shall apply, to the subgrade of areas to receive decomposed granite, prior to placement, an approved selective pre-emergent, surface-applied herbicide. Visible weeds, if not removed by other operations, shall be sprayed with an approved non-selective, post-emergent herbicide. Application rates and methods shall be as recommended by manufacturer.

##### 3.2.3 PLACING AND COMPACTING

Material shall be leveled to a uniform thickness so that the layer, after compaction, will not exceed the indicated thickness.

Water shall be added by sprinkling and mixing or reduced by aeration as necessary until the water content is at optimum or at the percentage as directed by the Contracting Officer. Mixing shall be continued until a uniform distribution of water is obtained.

Decomposed granite shall be thoroughly compacted for the full depth to at least ninety-five percent (95%) maximum density.

#### 3.3 FINISHING

Finish surface shall not vary more than .02 foot from required grades adjacent to both paved and unpaved areas.

Adjustments shall be made in placing, spreading, or finishing procedures as may be directed by the Contracting Officer to obtain a uniform layer thickness and true grades, to minimize segregation and degradation where pertinent, to reduce or increase water content, and to insure a satisfactory course.

Materials found unsatisfactory shall be replaced or reworked at the Contractor's expense to produce satisfactory material.

#### 3.4 MAINTENANCE

The finished surface shall be maintained in a weed free and satisfactory condition until the end of the hydroseed establishment period under SECTION 02921 HYDROSEEDING, or the plant establishment period under SECTION 02930 EXTERIOR PLANTING, whichever is longer. Visible weeds shall be sprayed with an approved non-selective, post-emergent herbicide. At the end of the maintenance period the contractor shall apply, to the decomposed granite surface an approved selective pre-emergent, surface-applied herbicide. Application rates and methods shall be as recommended by manufacturer.

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## SECTION 02811

## IRRIGATION SYSTEM

## PART 1 GENERAL

## 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

## AMERICAN WATER WORKS ASSOCIATION (AWWA)

AWWA C509 (2001; C509a-95) Resilient-Seated Gate Valves for Water Supply Service

## ASME INTERNATIONAL (ASME)

ASME B1.2 (1983; R 2001) Gages and Gaging for Unified Inch Screw Threads

ASME B16.3 (1998) Malleable Iron Threaded Fittings

ASME B40.1 (1991) Gauges - Pressure Indicating Dial Type - Elastic Element

## ASTM INTERNATIONAL (ASTM)

ASTM A 53/A 53M (2001) Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless

ASTM D 1785 (1999) Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120

ASTM D 2241 (2000) Poly(Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series)

ASTM D 2464 (1999) Threaded Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80

ASTM D 2466 (2001) Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40

ASTM D 2564 (1996a) Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Piping Systems

ASTM D 2855 (1996) Making Solvent-Cemented Joints with Poly(Vinyl Chloride) (PVC) Pipe and Fittings



MANUFACTURERS STANDARDIZATION SOCIETY OF THE VALVE AND FITTINGS  
INDUSTRY (MSS)

MSS SP-58	(1993) Pipe Hangers and Supports - Materials, Design and Manufacture
MSS SP-69	(1996) Pipe Hangers and Supports - Selection and Application
MSS SP-80	(1997) Bronze Gate, Globe, Angle and Check Valves

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70	(2002) National Electrical Code
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1.2 PERFORMANCE REQUIREMENTS

- a. The irrigation system is design to operate with a maximum 75 gallons per minute (GPM) with forty-five 45 PSI at the last spray head in each zone.
- b. The coodination and all applications (including plan submittals), permits and fees required for establishing the water service shall be the responsibility of the Contractor. The Contractor shall pay for all water utilized on this project for the duration of the contract.

1.3 GENERAL WATER SYSTEM REQUIREMENTS

1.3.1 Field Training

Contractor shall be responsible for training employees and subcontractors to ensure that all contractor operations personnel are familiar with safety rules and regulation and applicable governing agencies' and/or water districts' rules and/or regulations for irrigation systems. A copy of these rules and regulations shall be kept on the project site during all construction activities.

1.3.2 Service Area

Water service area shall be restricted to those areas explicitly approved by the applicable governing agencies and/or water districts.

1.3.3 Cross-Connections

Cross-connections between water system and any potable water system is strictly prohibited.

1.3.4 Sprinkler Heads

Contractor shall be responsible for the layout and adjusting all water irrigation sprinklers to eliminate overspray onto non-landscaped areas including, but not limited to, buildings, sidewalks, parking lots, roads

(paved and unpaved), trail systems, and flood control structures. Spray from sprinkler heads shall be limited to approved water service areas. Irrigation shall be done in a manner that will minimize runoff, pooling, and ponding.

#### 1.3.5 System Operation

Operation of the water system shall be limited to period of minimal use of the water service area by the general public as designated by the applicable governing agencies and/or water districts.

#### 1.3.6 As-built Drawings

Contractor shall provide to the Contracting Officer, as requested, the applicable governing agencies and/or water districts a full-size mylar copy of project as-built drawings prior to the final construction date.

#### 1.3.7 Modifications

Contractor shall obtain prior written approval from the Contracting Officer in addition to the applicable governing agencies and/or water districts for any proposed changes to the on-site water facilities.

### 1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The "RE" designates that the Resident Office will review the submittal for the Government. Submit the following in accordance with Section 01330, SUBMITTAL PROCEDURES:

#### SD-02 Shop Drawings

Sprinkler System; G, RE

As-built Drawings which provide current factual information showing locations of mains, heads, valves, bubblers, sprinklers and controllers including deviations from and amendments to the drawings and changes in the work shall be included. Drawings shall include a complete list of equipment and materials, and manufacturer's descriptive and technical literature, performance charts and curves, catalog cuts, and installation instructions.

#### SD-03 Product Data

Framed Instructions

Labels, signs, and templates of operating instructions that are required to be mounted or installed on or near the product for normal, safe operation.

Field Training

Information describing training to be provided, training aids to be used, samples of training materials to be provided, and schedules and notification of training.

#### Sprinkler System

Detailed procedures defining the Contractor's provisions for accident prevention, health protection, and other safety precautions for the work to be done.

#### SD-06 Test Reports

##### Field Tests

Performance test reports, in booklet form, showing all field tests performed to adjust each component; and all field tests performed to prove compliance with the specified performance criteria, upon completion and testing of the installed system. Each test report shall indicate the final position of control valves.

#### SD-07 Certificates

##### Sprinkler System

The material supplier's or equipment manufacturer's statement that the supplied material or equipment meets specified requirements. Each certificate shall be signed by an official authorized to certify in behalf of material supplier or product manufacturer and shall identify quantity and date or dates of shipment or delivery to which the certificates apply.

#### SD-10 Operation and Maintenance Data

##### Sprinkler System

(Four) 4 copies of operation and (Four) 4 copies of maintenance manuals for the equipment furnished. One complete set prior to field testing and the remainder upon acceptance. Manuals shall be approved prior to the field training course. Operating manuals shall detail the step-by-step procedures required for system startup, operation, and shutdown. Operating manuals shall include the manufacturer's name, model number, parts list, and brief description of all equipment and their basic operating features. Maintenance manuals shall list routine maintenance procedures, possible breakdowns and repairs, and troubleshooting guides. Maintenance manuals shall include piping and equipment layout, simplified wiring and control diagrams of the system as installed, and system programming schedule.

#### 1.5 DELIVERY AND STORAGE

All equipment delivered and placed in storage shall be protected from the weather; excessive humidity and temperature variation; direct sunlight (in

the case of plastic or rubber materials); and dirt, dust, or other contaminants.

#### 1.6 FIELD MEASUREMENTS

The Contractor shall verify all dimensions in the field and shall advise the Contracting Officer of any discrepancy before performing the work.

### PART 2 PRODUCTS

#### 2.1 GENERAL MATERIALS AND EQUIPMENT REQUIREMENTS

##### 2.1.1 Standard Products

Materials and equipment shall be the standard products of a manufacturer who has produced similar systems which have performed well for a minimum period of two (2) years prior to bid opening. Equipment shall be supported by a service organization that is, in the opinion of the Contracting Officer, reasonably convenient to the site. As appropriate, irrigation components shall be applicable for use with irrigation systems.

##### 2.1.2 Nameplates

Each item of equipment shall have the manufacturer's name, address, type or style, model or serial number, and catalog number on a plate secured to the item of equipment.

##### 2.1.3 Extra Stock

The following extra stock shall be provided: Two (2) sprinkler heads of each size and type, two (2) valve keys for operating manual valves, two (2) wrenches for removing and installing each type of head, two (2) quick coupler keys and hose swivels, four (4) irrigation controller housing keys, and four (4) controller keys.

#### 2.2 PIPING MATERIALS

##### 2.2.1 Irrigation Piping and Procedures

###### 2.2.1.1 Lateral Lines and Fittings for Permanent Underground Installation

Lateral lines and fittings three inches (3") and smaller shall be Schedule 40 PVC.

###### 2.2.1.2 Main Line and Fittings for Permanent Underground Installation

- a. Main line and fittings two and one-half inches (2-1/2") and larger shall be Class 200 PVC Ringtite.
- b. Main lines and fittings two inches (2") and smaller shall be Schedule 40 PVC plastic pipe with Schedule 40 fittings.

##### 2.2.2 Galvanized Steel Pipe and Associated Fittings

#### 2.2.2.1 Pipe for Permanent Above-Ground Installation

All permanent above-ground piping shall be galvanized steel, or as shown on the contract drawings, conforming to ASTM A 53/A 53M, Schedule 40, standard weight.

#### 2.2.2.2 Fittings

- a. Fittings shall be Class 150 conforming to requirements of ASME B16.3. Contractor shall use non-hardening, non-toxic pipe joint sealant formulated for use on water-carrying pipes on all metal connections.
- b. Pipe hangers and supports for pipe under bridges shall be in conformance with MSS SP-58.

#### 2.2.3 Polyvinyl Chloride (PVC) Pipe, Fittings, and Solvent Cement

##### 2.2.3.1 Pipe

- a. Pipe shall conform to the requirements of ASTM D 1785, PVC 1120 Schedule 40; or ASTM D 2241, PVC 1120 SDR 21, Class 200.
- b. All PVC pipe shall bear markings including manufacturer's name, nominal pipe size, schedule or class, pressure rating in PSI, NSF approval, and date of extrusion.

##### 2.2.3.2 Fittings

- a. For plastic pipe: Solvent welded socket type fittings shall conform to requirements of ASTM D 2466, Schedule 40. Threaded type fittings shall conform to requirements of ASTM D 2464, Schedule 80.
- b. For Ringtite pipe: Fittings shall be Class 200 PSI PVC one(1)-piece molded rubber ring seal fittings.

##### 2.2.3.3 Plastic Pipe Joints

Plastic pipe joints shall be solvent welded or threaded. Solvent cement shall conform to the requirements of ASTM D 2564. Use of pipe dope or solvents on threaded joints will not be permitted.

#### 2.2.4 Sleeving Material

Pipe utilized for sleeves shall be Class 200 PVC.

#### 2.3 MAINLINE PRESSURE REGULATOR/FILTER (STRAINER)

##### 2.3.1 Pressure Regulator

Pressure regulator shall be of a cast iron body construction with a pressure rating of 200 PSI minimum and have a spring range capable of 80 to 85 PSI setting. Contractor to set pressure regulator in the fully open position at time of installation. The regulator shall be tapped and plugged for pressure gauge attachment.

### 2.3.2 Mainline Filter (Strainer)

Mainline filter (strainer) shall have a cast iron housing, fusion epoxy coating, flanged connections with machined seat in the body and tapered set in the cap for accurate screen alignment. Strainer shall have NPT blow-off connections. Filter/strainer shall have a stainless steel screen with one-sixteenth (1/16) perforations maximum with a working pressure of 175 PSI. Size shall be as noted on contract drawings.

## 2.4 SPRINKLER HEADS

### 2.4.1 Pop-Up Spray Heads

Pop-up spray heads shall Rainbird 1800 series or equal. Nozzle rises as shown on the drawings. Body shall contain integral pressure regulator with debris screen.

### 2.4.2 Sprinklers Heads

Sprinklers shall be water driven, impact type capable of covering eighty feet (80') diameter at forty-five (45) PSI with a distribution rate of 3.7 GPM. Construction shall be heavy duty plastic with a choice of nozzles and adjustable radius capabilities. Pop-up sprinklers heads shall be installed on top of the channel slopes and in between the right of way and the service road. Impact sprinkles heads on risers shall be installed in the channel invert. Contractor shall install a check valve on the riser below each head.

### 2.4.3 Bubbler Heads

Heads shall be flood bubbler with fixed flow, pressure compensating, and designed for permanent mounting in drain tubes as detailed on the contract drawings:

- a. For trees, two (2) bubblers shall be installed in drain tubes as detailed on the contract drawings. Lateral length shall not exceed three-hundred feet (300') from each side of valve. Bubblers shall provide 1.0 GPM at 30 PSI.
- b. For shrubs, one (1) bubbler shall be installed in drain tube as detailed on the contract drawings. Lateral length shall not exceed three-hundred feet (300') from each side of valve. Bubblers shall provide 0.50 GPM at 30 PSI.
- c. For vines, one (1) bubbler shall be installed in drain tube as detailed on the contract drawings. Lateral length shall not exceed three-hundred feet (300') from each side of valve. Bubblers shall provide 0.50 GPM at 30 PSI.

### 2.4.4 Rotary Shrub Heads

Heads shall be gear driven on fixed risers on "on-grade" lateral piping. Rotary type heads shall be capable of a distribution rate from 0.90 GPM to 4.2 GPM and a trajectory of 25°. Construction shall be heavy duty ABS

plastic with a choice of twelve (12) nozzles and adjustable radius capabilities.

#### 2.4.5 Spray Heads

Heads shall be spray nozzles or adapters installed on fixed risers on lateral piping. Nozzles shall be capable of covering from sixteen feet (16') diameter to thirty feet (30') diameter at thirty (30) PSI.

### 2.5 VALVES

#### 2.5.1 Gate Valves, Less than Two and One-Half Inches (2-1/2")

Gate valves shall conform to the requirements of MSS SP-80, Type 1, Class 150, threaded ends, screw-in bonnet, non-rising stem and solid wedge disc. Gate valves shall include bronze cross handles.

#### 2.5.2 Gate Valves, Two and One-Half Inches (2-1/2") and Larger

Gate valves shall conform to the requirements of AWWA C509 and have encapsulated resilient wedge, parallel seats, non-rising stems, and open by counterclockwise turning. End connections shall be flanged. Interior construction of valves shall be bronze including stem containing a maximum two percent (2%) aluminum and maximum sixteen percent (16%) zinc.

#### 2.5.3 Quick Coupling Valves

Quick coupling valves shall have brass parts and shall be a two(2)-piece unit with one inch (1") FIP inlet threads. The valve shall use rod brass acme threaded keys for opening and closing. All lids shall be lockable, vinyl with spring for positive closure on key removal.

#### 2.5.4 Remote Electric Control Valves

Remote electric control valves shall be Hardie Ultra flow 700 series with flow control feature for flow adjustment, contamination proof self-flushing nylon screen, and manual shut off, or approved equal .

#### 2.5.5 Master Control Valves

- a. Master control valve shall be cast iron body with removable seat and have two (2) inlet tapplings for either angle or straight installation. The internal control system of the valves must be mechanically self-cleaning and automatically self-purging without the use of screens of filters. The diaphragm assembly unit must be hydraulically balanced and be mechanically guided in all positions. Upon opening, the internal control port shall enlarge in size, to purge, and gradually reduce during closure to prevent hammer and chatter. A manual flow stem to adjust the closing speed and internal flushing must be provided. When installed with the flow stem up, energizing and solenoid shall automatically exhaust all trapped air in the cover chamber. A drip tight, resilient seated petcock must be provided for manual opening without electricity. The solenoid pilot must be corrosion proof, molded in epoxy, and encased in brass housing.

- b. Master control valves shall be normally open.

## 2.6 ACCESSORIES AND APPURTENANCES

### 2.6.1 Valve Keys for Manually Operated Valves

Valve keys shall be one-half inch (1/2") diameter by three feet (3') long, tee handles and keyed to fit valves.

### 2.6.2 Valve Boxes

Valve boxes shall be plastic and lockable. Box sizes shall be adjustable for each type of valve used. The applicable station number shall be cast on cover and painted white. Shaft diameter of box shall be minimum five and one-quarter inches (5-1/4"). Valve boxes shall not be placed in the channel invert.

### 2.6.3 Pressure Gauges

Pressure gauges shall conform to requirements of ASME B40.1, single style pressure gauge for water with two inch (2") dial brass or aluminum case, bronze tube, gauge cock, pressure scrubber, and siphon. Scale range shall be suitable for irrigation sprinkler systems.

### 2.6.4 Service Clamps

Service clamps shall be bronze flat, double strap, with neoprene gasket or "O"-ring seal.

## 2.7 AUTOMATIC CONTROLLERS

The controller(s) shall be solid-state conforming to the following:

- a. The controller(s) shall be used as a stand alone controller. The controllers shall have 24 stations, be of the same manufacturer, and be available with English and Spanish displays and manuals as indicated on the drawings.
- b. Weather-resistant steel, locking cabinet with an internal transformer.
- c. The units shall require 110VAC, 1 amp input power. The step down transformer (110VAC - 26.5VAC) rated at 1.8 amp output capacity for operating a maximum of eight (4) solenoids at one (1) time. All controller(s) shall be grounded to a 5ohm or less earth ground.
- d. The solid state design units shall have 11 daily starts times or cycle looping option for unlimited starts. Watering schedule programmable up to 16 days. Water Budgeting : 1-255% in 1% increments. Station timing shall be from one (1) minute minimum time to ninety-nine (99) minutes in one (1) minute increments and 0.1 hours to 9.9 hours in 0.1 hour increments.
- e. All controllers shall be of the same manufacturer for the project.



## 2.8 FLOW SENSOR

Flow sensor shall be an insertion type with a non-magnetic, spinning impeller (paddle wheel) as the only moving part. Sensor sleeve shall be 316 stainless steel with the sensor housing being glass-filled PPS. The impeller shall be glass-filled nylon with a Pennlon sleeve bearing or Tefzel with an integral bearing. The shaft material shall be tungsten carbide. The sensor will be supplied with a two inch (2") NPT adapter for installation into any commercially available weld-on fitting or pipe saddle. The adapter shall have two (2) ethylene-propylene O-rings. The sensor electronics shall be potted in an epoxy compound designed for prolonged immersion. Electrical connections shall be two (2) single conductor 18 AWG leads eighteen inches (18") long. Insulation shall be direct burial "UF" type colored red for the positive lead and black for the negative lead. Insertion of the sensor into any pipe size shall be one and one-half inches (1-1/2") from the inside wall to the end of the sensor housing. The sensor shall operate in line pressures up to 400 PSI and liquid temperatures up to 220°F and operate in flows of one foot (1') per second up to thirty feet (30') per second.

## 2.9 CONTROLLER ENCLOSURE CABINET

The controller enclosure shall be of a vandal and weather resistant nature manufactured entirely of stainless steel. The main housing shall be louvered upper and lower body to allow for cross flow ventilation. A stainless steel backboard shall be provided for the purpose of mounting a controller. The backboard shall be mounted on four (4) stainless steel bolts that will allow for removal of the backboard. The inside door area shall provide adequate storage for plans, operating instruction, and scheduling information. The enclosure door shall have a continuous stainless steel piano hinge on one (1) side, and a three (3) point locking mechanism on the other side. The handle controlling the locking mechanism shall be located at the base of the door and be concealed within the surface of the door. The provision for a padlock shall be included within the locking mechanism. All controller enclosures shall be keyed the same.

## 2.10 ELECTRICAL WORK

- a. Wiring type and rigid conduit for electrical power shall be in accordance with NFPA 70.
- b. Wire color shall be continuous over its entire length. Pilot wires shall be a different color for each valve. Common wires shall be white with a different color stripe for each controller.

## 2.11 CONCRETE MATERIALS

Concrete shall have a compressive strength of 3000 psi at twenty-eight (28) days.

## PART 3 EXECUTION

### 3.1 INSTALLATION

Sprinkler system shall be installed after site grading has been completed. Excavation, trenching, and backfilling for sprinkler system shall be in accordance with the applicable provisions of SECTION 02316 EXCAVATION, TRENCHING, AND BACKFILLING FOR UTILITIES SYSTEMS AND GRADING, except as modified herein. The contractor shall design and layout an automatic irrigation system to water all hydro seeded and mitigation areas. Using quick couplers as a temporary irrigation system will not be permitted. The contractor shall provide for Contracting Officer approval design calculations, detailed drawings laying out valves, lines, sprinklers heads and any other items necessary for the irrigation system. The contractor shall maintain the irrigation system throughout the contract period replacing sprinkler heads, lines and valves as directed by the Contracting Officer.

#### 3.1.1 Trenching

Trenching shall be field adjusted as appropriate to eliminate existing tree root damage. When no option for trench layout is available then trench around roots shall be hand excavated to pipe grade when roots of two inches (2") diameter or greater are encountered. Trench width shall be four inches (4") minimum or one and one-half (1-1/2) times the diameter of pipe, whichever is wider. Backfill shall be hand tamped over excavation. When rock is encountered, trench shall be excavated four inches (4") deeper and backfilled with silty sand (SM) or well-graded sand (SW) to pipe grade. Trenches shall be kept free of obstructions and debris that would damage pipe. Subsoil shall not be mixed with topsoil. Existing paved areas and other obstacles shall be bored at a depth conforming to bottom of adjacent trenches. Pipe sleeves for bored pipe shall be two (2) pipe diameters larger than sprinkler pipe.

#### 3.1.2 Piping System

##### 3.1.2.1 Cover

Underground piping shall be installed as to meet the minimum depth of backfill cover specified or as shown on the contract drawings.

##### 3.1.2.2 Clearances

Minimum horizontal clearances between lines shall be four inches (4") for pipe two inches (2") and less; twelve inches (12") for two and one-half inches (2-1/2") and larger. Minimum vertical clearances between lines shall be one inch (1").

##### 3.1.2.3 Pipe and Conduit Sleeves

Pipe and conduit sleeves shall be installed with a minimum of off-set at the joints to permit easy installation and removal of the irrigation and conduit lines. All plastic lines shall be installed in sleeves under paved areas and other structures. Sleeves shall extend at least twelve inches (12") beyond the edges of the pavement or structure. Sizes shall be:

#### Pipe Sizes in Inches

Minimum Sleeve Size in Inches

1/2	2
3/4	2-1/2
1 to 1-1/2	3
2 to 2-1/2	4
3 and 4	6
6	10

Number of Wires  
Minimum Conduit Size in Inches

1 to 10	1
11 to 27	2
28 to 52	3

## 3.1.3 Piping Installation

## 3.1.3.1 Polyvinyl Chloride (PVC) Pipe

- a. Rubber ring seal joint shall be factory-made male end or prepared field-cut male end to exact specifications of factory-made end. Carefully clean bell or coupling and insert rubber ring without lubricant. Position ring carefully according to manufacturer's instructions. Lubricate male end according to manufacturer's instructions and insert male end to specified depth. Use hands only when inserting PVC pipe. Thrust blocks shall be provided where necessary to resist system pressure on Ringtite pipe and fittings. Blocks shall be concrete and the size shall be based on an average soil safe bearing load of 1,000# per square foot. Form thrust block in such a manner that concrete comes in contact only with the fittings. Thrust blocks shall be between solid soil and the fitting.
- b. Solvent-cemented joints shall conform to the requirements of ASTM D 2855.
- c. Threaded joints shall be full cut with a maximum of three (3) threads remaining exposed on pipe and nipples. Threaded joints shall be made tight without recourse to wicks or fillers, other than polytetrafluoroethylene thread tape.
- d. Piping shall be joined to conform with requirements of ASTM D 2855, and pipe manufacturer's instructions. Pipe shall be installed in a serpentine (snaked) manner to allow for expansion and contraction in trench before backfilling. Pipes shall be installed at temperatures over 40° F.
- e. Install pipe with all markings pointing up for visual inspection and

verification.

- f. Pipe shall be kept free from dirt and pipe scale. Pipe ends shall be cut square.

#### 3.1.3.2 Threaded Galvanized Steel Pipe

- a. Prior to installation, pipe shall be reamed. Threads shall be cut in conformance with ASME B1.2. Pipe joint compound shall be applied to male end only.
- b. Galvanized steel pipe for permanent underground installation shall be painted with two (2) coats of Koppers #50 bitumastic, or approved equal, or wrapped with 2 mil thick black plastic insulating tape as manufactured by 3M Company or approved equal.
- c. Pipe attachment installation under bridges shall be in conformance with MSS SP-69 and as directed by the Contracting Officer.

#### 3.1.3.3 Insulating Joints

Insulating and dielectric fittings shall be provided where pipes of dissimilar metal are joined and at connections to water supply mains as shown.

#### 3.1.4 Valves and Valve Boxes

- a. Valves, all types, shall be installed as detailed on the contract drawings.
- b. Valve boxes shall be individually provided for each gate valves, quick coupling valves, remote control valves, and master control valves.
- c. Only one (1) valve shall be installed in a valve box, extending from grade to below valve body, with a minimum of four inches (4") cover measured from finish grade to top of valve stem.
- d. Master control valve(s) and flow sensor(s) shall be installed per point-of-connection (POC) as detailed on the contract drawings.

#### 3.1.5 Sprinkler Heads and Valves

Sprinkler heads and valves shall be installed plumb and level with terrain.

#### 3.1.6 Mainline Pressure Regulator/Filter (Strainer)

Contractor shall install a pressure regulator and filter (strainer) at each point-of-connection (POC) on a concrete pad in a stainless steel LeMeur enclosure, or approved equal.

#### 3.1.7 Flow Sensor

Contractor shall install flow sensor(s) at each point-of-connection (POC) as detailed on the contract drawings. There are one (1) flow sensors at

each POC. The one flow sensor shall be wired to the closest controller. This flow sensor is to be wired to only that one controller on that branch of the mainline. Maximum run of wire shall be 1,500 feet between flow sensor and controller.

### 3.1.8 Control Wire and Conduit

#### 3.1.8.1 Wires

Low voltage wires may be buried beside pipe in same trench. Rigid conduit shall be provided where wires run under paving. Wires shall be number tagged at key locations along main to facilitate service. One (1) control circuit shall be provided for each zone and a circuit to control sprinkler system. Wires shall be #10 common and #12 control with UL approval for direct burial.

#### 3.1.8.2 Loops

A thirty six inch (36") loop of wire shall be provided at each valve where controls are connected.

#### 3.1.8.3 Expansion and Contraction

Multiple tubes or wires shall be bundled and taped together at ten foot (10') intervals with twelve inch (12") loop for expansion and contraction.

#### 3.1.8.4 Splices

Electrical splices shall be waterproof.

### 3.1.9 Automatic Controllers

- a. Exact field location of controllers shall be determined before installation. Coordinate the electrical service to these locations with the electrical provider. Install in accordance with manufacturer's recommendations and NFPA 70.

#### 3.1.10 Thrust Blocks

Concrete shall be placed so that sides subject to thrust or load are against undisturbed earth, and valves and fittings are serviceable after concrete has set.

#### 3.1.11 Backfill

##### 3.1.11.1 Minimum Cover

Depth of cover above pipe shall be twelve (12") for all lateral lines; twenty-four inches (24") for all main lines; thirty-six inches (36") for pipes under traffic loads; and twenty-four inches (24") for low-voltage wires. Remainder of trench or pipe cover shall be filled to within three inches (3") of top with excavated soil, and compact soil with plate hand-held compactors to same density as undisturbed adjacent soil.

### 3.1.11.2 Restoration

Top three inches (3") shall be filled with topsoil and compacted with same density as surrounding soil. Seeded areas and plants shall be restored in accordance with Section 02921, HYDROSEEDING, and Section 02930, EXTERIOR PLANTING

### 3.1.12 Adjustment

After grading, seeding, and rolling of planted areas, sprinkler heads shall be adjusted flush with finished grade or as shown on the drawings. Adjustments shall be made by providing new nipples of proper length or by use of heads having an approved device, integral with head, which will permit adjustment in height of head without changing piping.

### 3.1.13 Cleaning of Piping

Prior to the hydrostatic and operation tests, the interior of the pipe shall be flushed with clean water until pipe is free of all foreign materials. Flushing and cleaning out of system pipe, valves, and components shall not be considered completed until witnessed and accepted by Contracting Officer.

## 3.2 FIELD TESTS

All instruments, equipment, facilities, and labor required to conduct the tests shall be provided by Contractor.

### 3.2.1 Sprinkler Adjustment Test

Test shall consist of a coverage test of the on site irrigation system to ensure that overspray and runoff is controlled.

### 3.2.2 Hydrostatic Pressure Test

Piping shall be tested hydrostatically before backfilling and proved tight at a hydrostatic pressure of 150 psi without pumping for a period of one hour with an allowable pressure drop of five (5) psi. If hydrostatic pressure cannot be held for a minimum of four (4) hours, Contractor shall make adjustments or replacements and the tests repeated until satisfactory results are achieved and accepted by the Contracting Officer.

### 3.2.3 Operation Test

At conclusion of pressure test, bubblers, sprinkler heads, and quick coupling assemblies shall be installed and the entire system tested for operation under normal operating pressure. Operation test consists of the system operating through at least one complete programmed cycle for all areas to be irrigated.

### 3.2.4 Coverage Test

The hydro seed and mitigation irrigation systems shall be tested for coverage to insure that all hydro seeded and mitigation areas are watered.

The coverage test shall consist of the system operating through at least one complete programmed cycle for all areas to be sprinkled (where applicable). The contractor shall not space the sprinkler heads beyond the manufacturers recommendation for the prevailing wind conditions for the project. The contractor shall make adjustments, or replacements and repeat the test until satisfactory results are achieved and accepted by contracting officer. Coverage test shall be conducted prior to hydro seeding and before landscape acceptance.

### 3.3 POSTING FRAMED INSTRUCTIONS

Framed instructions containing wiring and control diagrams under glass or in laminated plastic shall be posted where directed. Condensed operating instructions, prepared in typed form, shall be framed as specified above and posted beside the diagrams. The framed instructions shall be posted before acceptance testing of the system. After as-built drawings are approved by Contracting Officer, controller charts and programming schedule shall be prepared. One (1) chart for each controller shall be supplied. Chart shall be a reduced drawing of actual as-built system that will fit the maximum dimensions inside controller housing. Black line print for chart and a different pastel or transparent color shall indicate each station area of coverage. After chart is completed and approved for final acceptance, chart shall be sealed between two (2) 20 mil pieces of clear plastic.

### 3.4 CLEANUP

Upon completion of installation of system, all debris and surplus materials resulting from the work shall be removed.

### 3.5 MAINTENANCE

Contractor shall maintain all irrigation systems and components in good working order including water point-of-connection facilities (meter and the like) for the length of this contract.

-- End of Section --

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## SECTION 02921

## HYDROSEEDING

## PART 1 GENERAL

## 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

## ASTM INTERNATIONAL (ASTM)

ASTM D 4972 (2001) pH of Soils

ASTM D 5268 (1992; R 1997) Topsoil Used for  
Landscaping Purposes

## U.S. DEPARTMENT OF AGRICULTURE (USDA)

AMS Seed Act (1940; R 1988; R 1998) Federal Seed Act

## 1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The "RE" designates that the Resident Office will review the submittal for the Government. Submit the following in accordance with Section 01330, SUBMITTAL PROCEDURES:

## SD-03 Product Data

## Equipment.

A listing of equipment to be used for the seeding operation.

## Delivery.

Delivery schedule.

## Topsoil.

Topsoil from the stripping and stock piling operation.

## Quantity Check.

Bag count or bulk weight measurements of material used compared

with area covered to determine the application rate and quantity installed.

Seed Establishment Period.

Calendar time period for the seed establishment period. When there is more than one seed establishment period, the boundaries of the seeded area covered for each period shall be described.

Maintenance Record.

Maintenance work performed, area repaired or reinstalled, diagnosis for unsatisfactory stand of seeded plants.

Maintenance Plan; G, RE.

Maintenance plan indicating the contractor's method(s) to establish a healthy stand of native plants. Provide irrigation system layout plan and or indicate method(s) of water application and maintenance required to meet specification. The maintenance plan shall cover one year of plant establishment and shall include a watering and maintenance schedule.

Application of Pesticide.

Pesticide treatment plan with sequence of treatment work with dates and times. The pesticide trade name, EPA registration number, chemical composition, formulation, concentration of original and diluted material, application rate of active ingredients, method of application, area treated, amount applied; and the name and state license number of the state certified applicator shall be included.

Wood cellulose fiber mulch and tackifier.

Application rates recommended by the manufacture.

#### SD-04 Samples

Delivered Topsoil.

Samples taken from several locations at the source.

Soil Amendments.

A 5 lbs sample.

Mulch.

A 5 lbs sample.

Erosion Control Material

Soil erosion control material sample meeting requirements.

## SD-06 Test Reports

## Equipment Calibration.

Certification of calibration tests conducted on the equipment used in the seeding operation.

## Soil Test.

Certified reports of inspections and laboratory tests, prepared by an independent testing agency, including analysis and interpretation of test results. Each report shall be properly identified. Test methods used and compliance with recognized test standards shall be described.

## SD-07 Certificates

## Seed.

## Topsoil.

## pH Adjuster.

## Fertilizer.

## Soil Conditioner.

## Mulch.

## Pesticide.

Prior to the delivery of materials, certificates of compliance attesting that materials meet the specified requirements. Certified copies of the material certificates shall include the following:

- a. Seed. Classification, botanical name, common name, percent pure live seed, minimum percent germination and hard seed, maximum percent weed seed content, and date tested.
- b. Topsoil. Particle size, pH, organic matter content, textural class, soluble salts, chemical, mechanical and plant growth analyses.
- c. pH Adjuster. Calcium carbonate equivalent and sieve analysis.
- d. Fertilizer. Chemical analysis and composition percent.
- e. Soil Conditioner: Composition and source.
- f. Mulch: Composition and source.
- g. Pesticide. EPA registration number and registered uses.

### 1.3 SOURCE INSPECTION

The source of delivered topsoil shall be subject to inspection.

### 1.4 DELIVERY, INSPECTION, STORAGE, AND HANDLING

#### 1.4.1 Delivery

A delivery schedule shall be provided at least 10 calendar days prior to the first day of delivery.

##### 1.4.1.1 Delivered Topsoil

Prior to the delivery of any topsoil, its availability shall be verified in paragraph TOPSOIL. A soil test shall be provided for topsoil delivered to the site.

##### 1.4.1.2 Soil Amendments

Soil amendments shall be delivered to the site in the original, unopened containers bearing the manufacturer's chemical analysis. In lieu of containers, soil amendments may be furnished in bulk. A chemical analysis shall be provided for bulk deliveries.

##### 1.4.1.3 Pesticides

Pesticide material shall be delivered to the site in the original, unopened containers bearing legible labels indicating the EPA registration number and the manufacturer's registered uses.

#### 1.4.2 Inspection

Seed shall be inspected upon arrival at the job site for conformity to species and quality. Seed that is wet, moldy, or bears a test date five months or older, shall be rejected. Other materials shall be inspected for compliance with specified requirements. The following shall be rejected: open soil amendment containers or wet soil amendments; topsoil that contains slag, cinders, stones, lumps of soil, sticks, roots, trash or other material over a minimum 1-1/2 inch diameter; and topsoil that contains viable plants and plant parts. Unacceptable materials shall be removed from the job site.

#### 1.4.3 Storage

Materials shall be stored in designated areas. Seed and fertilizer shall be stored in cool, dry locations away from contaminants. Chemical treatment material shall be stored according to manufacturer's instructions and not with seeding operation materials.

#### 1.4.4 Handling

Except for bulk deliveries, materials shall not be dropped or dumped from vehicles.

## 1.4.5 Time Limitation

- a. Hydroseed slurry mixture for Seed Mix which has not been applied within twenty (20) minutes after mixing shall be rejected and replaced at the Contractor's expense.

## PART 2 PRODUCTS

## 2.1 SEED

## 2.1.1 Seed Classification

State-certified seed of the latest season's crop shall be provided in original sealed packages bearing the producer's guaranteed analysis for percentages of mixture, purity, germination, hard seed, weed seed content, and inert material. Labels shall be in conformance with AMS Seed Act and applicable state seed laws.

## 2.1.2 Hydroseed Native Seed Species and Mixtures

Native seed species shall be as follows:

## Pure Live Seed (PLS)

Botanical Name	Common Name	In Pounds Per Acre
SEED MIX :		
Festuca Ovina	Sheep Fescue	4.0
Festuca longifolia		4.0
Melica californica		8.0
Coreopsis lanceolata		4.0
Chrysanthemum leucanthemum	Oxeye Daisy	3.0
Rudbeckia amplexicaulis		2.0
Eschscholzia californica	California Poppy	2.0
Festuca rubra molate	Native Red Fescue	6.0
Phacelis campanularia		2.0
Linaria maroccana		2.0
Gaillardia pulchella		4.0
Vulpia myuros "Zorro"	Zorro Fescue	4.0
TOTAL PLS in LBS/ACRE		45.0

Hydroseed Mitigation seed species for channel slopes shall be as follows:

## Pure Live Seed (PLS)

Botanical Name	Common Name	In Pounds Per Acre
SEED MIX :		
Ambrosia psilostachya	Western ragweed	2.0
Eriogonum fasciculatum	Calif. buckwheat	4.0
Plantago ovata	Plantain	20.0
Urtica sp.	Stinging nettle	1.0
Isocoma menziesii	Golden bush	4.0
Solanum xanti	Purple nightshade	1.0

Nassella lepida	Foothill needlegrass	6.0
Heterotheca grandiflora	Telegraph weed	2.0
Galium sp.	Bedstraw	<u>2.0</u>
TOTAL PLS in LBS/ACRE		42.0

Broadcast Mitigation seed species for channel invert shall be as follows:

Pure Live Seed (PLS)

Botanical Name	Common Name	In Pounds Per Acre
SEED MIX :		
Ambrosia psilostachya	Western ragweed	2.0
Artemisia douglasiana	Douglas mugwort	4.0
Solanum xanti	Purple nightshade	1.0
Galium sp.	Bedstraw	<u>2.0</u>
TOTAL PLS in LBS/ACRE		9.0

### 2.1.3 Seed Quality

- a. Weed seed shall not exceed one percent (1%) by weight of the total mixture. Wet, moldy, or otherwise damaged seed shall be rejected.
- b. Native plant seed shall have been inoculated with mycorrhizal fungi prior to purchase.

### 2.1.4 Seed Mixing

The mixing of seed may be done by the seed supplier prior to delivery, or on site as verified by the Contracting Officer.

### 2.1.5 Substitutions

Substitutions will not be allowed without written request and approval from the Contracting Officer. The contractor shall make all arrangements with the seed vendor(s) to hold the required amount of seeds needed for the project. The contractor shall verify and secure from the seed vendor(s) the required native seed species and quantity no later than 160 days or sooner prior to seeding operations.

## 2.2 TOPSOIL

Topsoil shall be as defined in ASTM D 5268. When additional topsoil is required beyond the available topsoil, the topsoil shall be delivered and amended as recommended by the soil test(s) for the seed specified. The contractor shall pay for all soils tests as directed by the Contracting Officer. Topsoil shall be free from slag, cinders, stones, lumps of soil, sticks, roots, trash or other material over a minimum 3 inches in diameter. Topsoil shall be free from viable plants and plant parts.

## 2.3 SOIL AMENDMENTS

Soil amendments shall consist of pH adjuster, fertilizer, and soil conditioner meeting the following requirements. Vermiculite shall not be used.



### 2.3.1 pH Adjuster

The pH adjuster shall not be less than 99 percent elemental sulfur. The pH adjuster shall be used to create a favorable soil pH for the plant material specified.

### 2.3.2 Fertilizer

Fertilizer shall be commercial grade, free flowing, uniform in composition, and consist of a nitrogen-phosphorus-potassium ratio. The fertilizer shall conform to applicable State and Federal regulations and shall bear the manufacturer's guaranteed statement of analysis.

#### Fertilizer 1:

Nitrogen	5%
Phosphoric Acid	3%
Water Soluble Potash	1%
Humus (composted organic and mineral matter)	50%
Humic Acids (derived from compost)	15%
Soluble Metallic Iron	1%

#### Fertilizer 2 (based in a four (4) to six (6) month release form):

Coated Slow Release Nitrogen*	9%
Urea Nitrogen	2%
Available Phosphoric Acid**	8%
Soluble Potash***	8%
Humus (composted organic and mineral matter)	25%
Humic Acid (derived from compost)	5%
Iron (derived from iron sulfate)	2%
Manganese (derived from manganese sulfate)	.05%
Zinc (derived from zinc sulfate)	.05%
Sulfur	7%

\* derived from sulfur coated urea (controlled release)

\*\* derived from triple super phosphate

\*\*\* derived from compost and muriate of potash

### 2.3.3 Agricultural Gypsum

Agricultural gypsum shall be commercially packaged, free flowing, of a finely ground form and an agricultural grade, minimum ninety-two percent (92%) calcium sulfate by volume, free of any toxic material. One-hundred percent (100%) of the ground material shall pass through a ten (10) mesh screen and at least fifty percent (50%) of the material shall pass through a 100-mesh screen.

### 2.3.4 Agricultural Sulfur

Agricultural sulfur shall be first quality commercial grade, commercially packaged, free flowing, of a flour of sulfur finely ground form.

### 2.3.5 Decomposed Wood Derivatives

Decomposed wood derivatives shall be rotted sawdust that is free of stones, sticks, soil, and toxic substances harmful to plants, and is fully composted. Rotted sawdust shall be stabilized with 7.5 pounds of nitrogen added uniformly to each cubic yard of material.

#### 2.3.6 Wood Cellulose Fiber

Wood cellulose fiber for use with hydraulic application of seed shall consist of specially prepared wood cellulose fiber processed to contain no growth or germination-inhibiting factors and dyed an appropriate color to facilitate visual monitoring of the application of materials (sawdust or grass clippings are not acceptable fibers). On an air-dry weight basis, the wood cellulose fiber shall contain a maximum of twelve percent (12%) moisture, plus or minus three percent (3%) at the time of manufacture. The pH range shall be between 4.5 and 6.5.

#### 2.4 WATER

Water for native seeding and plant establishment shall be the responsibility of the Contractor, unless otherwise noted. The contractor shall pay all water cost for the entire duration of the contract. Water shall not contain elements toxic to plant life.

#### 2.5 PESTICIDE

Pesticide shall be insecticide, herbicide, fungicide, nematocide, rodenticide or miticide. For the purpose of this specification, a soil fumigant shall have the same requirements as a pesticide. The pesticide material shall be EPA registered and approved.

#### 2.6 Erosion Control Material

Soil erosion control material shall be heavy, twisted jute mesh weighing approximately 1.22 pounds per linear yard and four feet (4') wide with mesh openings of approximately one inch (1") square. Deviation from this requirement shall be approved by the Contracting Officer.

Erosion control anchor material shall be installed as recommended by the manufacturer and as shown on the drawings.

#### 2.7 Tackifier

Tackifier shall be Ecology Control M-binder or approve equal.

### PART 3 EXECUTION

#### 3.1 INSTALLING SEED TIME AND CONDITIONS

##### 3.1.1 Seeding Time

Seed shall be installed from 1 October to 31 January.

##### 3.1.2 Seeding Conditions

Seeding operations shall be performed only during periods when beneficial results can be obtained. When drought, excessive moisture, or other unsatisfactory conditions prevail, the work shall be stopped when directed.

A time variance to the seeding operations will not be allowed, unless approved by the Contracting Officer.

#### 3.1.3 Equipment Calibration

Immediately prior to the commencement of seeding operations, calibration tests shall be conducted on the equipment to be used. These tests shall confirm that the equipment is operating within the manufacturer's specifications and will meet the specified criteria. The equipment shall be calibrated a minimum of once every day during the operation. The calibration test results shall be provided within 1 week of testing.

#### 3.1.4 Soil Test

Delivered topsoil, existing soil in smooth graded areas, and stockpiled topsoil shall be tested in accordance with ASTM D 5268 and ASTM D 4972 for determining the particle size, pH, organic matter content, textural class, chemical analysis, soluble salts analysis, mechanical and plant growth analysis. Sample collections on site shall be random over the entire site.

Sample collections for stockpiled topsoil shall be at different levels in the stockpile. Three (3) samples shall be tested and the locations shall be determined by the Contracting Officer. The planting soil shall be free from debris, noxious weeds, toxic substances, or other materials harmful to plant growth. The test of stockpiled topsoil shall determine if addition quantities of soil amendments and soil conditioners are required to meet local growing conditions for the seed species specified.

### 3.2 SITE PREPARATION

#### 3.2.1 Finished Grade and Topsoil

The Contractor shall verify that finished grades are as indicated on drawings, and the placing of topsoil, smooth grading, and compaction requirements have been completed in accordance with Section 02316 EXCAVATION, TRENCHING, AND BACKFILLING FOR UTILITIES SYSTEMS AND GRADING, prior to the commencement of the seeding operation.

Seeded (and planted) areas shall be filled or have surplus soil removed for repair of erosion or other grade deficiencies to attain a smooth finished soil surface. Drainage patterns shall be maintained. Imported topsoil used for repair of erosion or grade deficiencies shall conform to "topsoil" requirements.

#### 3.2.2 Application of Soil Amendments

Fertilizer and soil amendments shall be incorporated into the soil as part of the tillage operation to the depth of tillage at the following rates per 1,000 square feet of seeded area and watered in thoroughly such that soils are wet to a minimum depth of six inches (6") at least once prior to seeding/planting operations:

a. for 2:1 or less slopes:  
150 pounds Fertilizer 1  
30 pounds Fertilizer 2  
40 pounds Agricultural Gypsum  
20 pounds Agricultural Sulfur

b. for 2:1 or more slopes:  
90 pounds Fertilizer 1  
20 pounds Fertilizer 2  
28 pounds Agricultural Gypsum  
12 pounds Agricultural Sulfur

### 3.2.3 Tillage

- a. Tillage shall be accomplished by plowing, disking, harrowing, rototillage machinery, or other approved operations until the condition of the soil is acceptable. Undulations or irregularities in the surface shall be leveled before the next specified operations.
- b. Slopes up to a 2:1 (horizontal:vertical ratio) shall be tilled to a depth of at least six inches (6").
- c. Slopes between a 2:1 (horizontal:vertical ratio) and 1:1 shall be tilled to a depth of at least two inches (2").
- d. Slopes steeper than 1:1, shall be hand raked to a depth of at least one inches (1").

### 3.2.4 Prepared Surface

#### 3.2.4.1 Preparation

The prepared surface shall be a maximum 1 inch below the adjoining grade of any surfaced area. New surfaces shall be blended to existing areas. The prepared surface shall be completed with a light raking to remove debris.

#### 3.2.4.2 Debris

Debris over a minimum 2 inch in any dimension shall be removed from the surface. Rocks and stones may remain in the surface soil at the discretion of the Contracting Officer.

#### 3.2.4.3 Protection

Areas with the prepared surface shall be protected from compaction or damage by vehicular or pedestrian traffic and surface erosion.

### 3.3 INSTALLATION

Prior to installing seed, any previously prepared surface compacted or damaged shall be reworked to meet the requirements of paragraph SITE PREPARATION. Seeding operations shall not take place when the wind velocity will prevent uniform seed distribution.

### 3.3.1 Installing Seed

Seeding methods shall be by Hydroseeding and Broadcast. Seeding procedure shall ensure even coverage.

#### 3.3.1.1 Broadcast Seeding

Broadcast Seeding shall be uniformly broadcast at the rate shown per acre using broadcast seeders. Half the total rate of seed application shall be broadcast in 1 direction, with the remainder of the seed rate broadcast at 90 degrees from the first direction. Seed shall be covered a maximum 1-1/2" by raking, or other approved device. Equipment used for broadcast seeding shall be approved by the contracting officer.

#### 3.3.1 Application Operations

Slurry shall be uniformly applied in the following two (2) step process under pressure over the entire area utilizing a sweeping arched stream motion allowing the fiber to build on itself until a uniform coat is achieved. Both operations shall be completed for a particular area in one (1) working day. The hydroseeded area shall not be rolled.

- a. Seed mixture and one-third (1/3) of the wood cellulose fiber mulch and tackifier shall be added to the appropriate amount of water, thoroughly mixed to produce a homogeneous slurry, and be applied to designated areas.
- b. After the initial spraying, the Contractor shall then mix the remaining two-thirds (2/3) of the wood cellulose fiber mulch and tackifier with the appropriate amount of water, thoroughly mixed to produce a homogeneous slurry, and apply to designated areas.

Slurry shall be allowed to dry for approximately two (2) hours and then immediately commence syringe irrigation to germinate seed. Water shall be applied at a rate sufficient to ensure continuously moist soil conditions to a minimum depth of one inch (1"). Run-off and puddling shall be prevented.

#### 3.3.2 Wood cellulose fiber mulch and tackifier

Wood cellulose fiber, paper fiber, or recycled paper shall be applied as part of the two step hydroseeding operation. The mulch and tackifier shall be mixed and applied in accordance with the manufacturer's recommendations.

#### 3.3.3 Watering Seed

The contractor shall submit a watering and maintenance plan prior to start of seeding operation. Watering shall be started immediately after completing the seeding of an area. Water shall be applied to supplement rainfall at a rate sufficient to ensure moist soil conditions to a minimum 1 inch depth. Run-off and puddling shall be prevented. Watering of other adjacent areas or plant material shall be prevented.

### 3.4 QUANTITY CHECK

For materials provided in bags, the empty bags shall be retained for recording the amount used. For materials provided in bulk, the weight certificates shall be retained as a record of the amount used. The amount of material used shall be compared with the total area covered to determine the rate of application used. Differences between the quantity applied and the quantity specified shall be adjusted as directed.

### 3.5 APPLICATION OF PESTICIDE

When application of a pesticide becomes necessary to remove a pest or disease, a pesticide treatment plan shall be submitted and coordinated with the installation pest management program.

A state certified applicator shall apply required pesticides in accordance with EPA label restrictions and recommendations. Clothing and personal protective equipment shall be used as specified on the pesticide label. A closed system is recommended as it prevents the pesticide from coming into contact with the applicator or other persons. Water for formulating shall only come from designated locations. Filling hoses shall be fitted with a backflow preventer meeting local plumbing codes or standards. Overflow shall be prevented during the filling operation. Prior to each day of use, the equipment used for applying pesticide shall be inspected for leaks, clogging, wear, or damage. Any repairs are to be performed immediately. A pesticide plan shall be submitted.

### 3.6 Weed Abatement

Irrigation system installation, tillage operations, and finish grade shall be completed and approved prior to weed abatement operations. Contractor shall then perform a two (2) step procedure as follows:

- a. Contractor shall operate the irrigation system to keep seeded areas uniformly moist for a period of three (3) weeks. At the end of the three (3) week period, Contractor shall spray all visible weeds with a contact herbicide. Application method shall be as recommended by manufacturer. After spraying, areas shall remain unwatered for a minimum of forty-eight (48) hours. Contractor shall then remove the weeds from the project.
- b. Contractor shall water seven (7) additional consecutive calendar days from the first application of herbicide, and apply a contact herbicide. After the second spraying, water shall not be applied for an additional forty-eight (48) hour period. Contractor shall then remove the weeds from the project and commence hydroseeding operations.

### 3.7 Placing Erosion Control Material

Jute mesh shall be placed as indicated in accordance with the manufacturer's recommendations and as shown on the drawings. Jute mesh shall be installed on all channel slopes and on back slopes 2:1 and greater. Placement of the erosion control material shall be accomplished without damage to installed material or without deviation to finished grade.

### 3.8 RESTORATION AND CLEAN UP

#### 3.8.1 Restoration

Seeded areas, pavements, and facilities that have been damaged from the seeding operation shall be restored to original condition at Contractor's expense.

#### 3.8.2 Clean Up

Excess and waste material shall be removed from the seeded areas and shall be disposed offsite on a daily bases. Adjacent paved areas shall be cleaned

### 3.9 PROTECTION OF INSTALLED AREAS

Immediately upon completion of the seeding operation in an area, the area shall be protected against traffic or other use by erecting barricades and providing signage as required, or as directed. Signage shall be in accordance with this specifications.

### 3.10 SEED ESTABLISHMENT PERIOD

#### 3.10.1 Commencement

The plant establishment period to obtain a healthy stand of plants shall begin after seeding operation have been completed and approved by the contracting Officer. The seed establishment period shall be 1 year from the date of Contracting Officer's approval. Written calendar time period shall be furnished for the seed establishment period. When there is more than 1 seed establishment period, the boundaries of the seeded area covered for each period shall be described. The seed establishment period shall be modified for inclement weather, shut down periods, or for separate completion dates of areas.

#### 3.10.2 Proper Stand of seed

An acceptable healthy seed condition is defined as follows:

- a. SEED MIX shall have a solid soil surface growth ground covering with bare spots no larger than six inches (6") square and with barren areas not exceeding four percent (4%) of the total seeded area. Within this growth covering there shall be at least one (1) woody type plant species from the required seed mix (or as supplemented by planted stock) per twenty-four inches (24") square over the entire seeded area.

#### 3.10.3 Maintenance During Establishment Period

Maintenance of the seeded areas shall include eradicating weeds, insects and diseases; protecting seeded areas from surface erosion; maintaining slopes to design conditions; protecting installed areas from traffic; trash removal; watering; and post-fertilization. Weeds shall be removed as soon as possible and as directed by the Contracting Officer. The contractor shall provide sufficient work force to remove weeds on a daily bases.

#### 3.10.4 Post-Fertilization

- a. Forty-five(45)calendar days after commencement of establishment, Fertilizer 1 shall be general broadcast over all seeded areas at the rate of twenty-five (25) pounds per 1,000 square feet and thoroughly irrigated into soils immediately after application.
- b. Fertilizer 1 shall be general broadcast over all planting areas at the rate of twenty-five (25) pounds per 1,000 square feet at the end of the Establishment Period.

#### 3.10.5 Pesticide Treatment

Treatment for disease or pest shall be in accordance with paragraph APPLICATION OF PESTICIDE.

#### 3.10.6 Repair or Reestablishment

Unsatisfactory stand of native plants and mulch shall be repaired or reinstalled. Eroded areas shall be repaired in accordance with paragraph SITE PREPARATION and per 3.3.1.1 Broadcast Seeding.

#### 3.10.7 Maintenance Record

The Contractor is required to furnish, upon written request from the Contracting Officer, daily maintenance records describing the maintenance work performed; daily watering information and amount, including durations, areas weeded (if applicable), areas repaired or reinstalled (if applicable), and diagnoses for unsatisfactory stands of grass plants.

#### 3.11 FINAL ACCEPTANCE

##### 3.11.1 Preliminary Inspection

Prior to the completion of the establish period, a preliminary inspection shall be held by the Contracting Officer. Time for the inspection shall be establish in writing. The acceptability of the seeded areas in accordance with the specification shall be determined. An unacceptable stand of hydroseeded area shall be replanted per 3.3.1.1 Broadcast Seeding and as directed by the Contracting Officer as soon as seeding conditions permit.

##### 3.11.2 Final Inspection

A final inspection shall be held by the Contracting Officer to determined that the deficiencies noted in the preliminary inspection have been corrected. Time for the final inspection shall be in writing.

-- End of Section --



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## SECTION 02930

## EXTERIOR PLANTING

## PART 1 GENERAL

## 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

## AMERICAN NURSERY AND LANDSCAPE ASSOCIATION (ANLA)

ANLA Z60.1 (1996) Nursery Stock

## ASTM INTERNATIONAL (ASTM)

ASTM D 4972 (2001) pH of Soils

ASTM D 5268 (1992; R 1997) Topsoil Used for  
Landscaping Purposes

## U.S. GENERAL SERVICES ADMINISTRATION (GSA)

CID A-A-1909 Fertilizer

## FEDERAL SPECIFICATIONS (FS)

FS O-F-241(Rev D) Fertilizers, Mixed,  
Commercial

## 1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The "RE" designates that the Resident Office will review the submittal for the Government. Submit the following in accordance with Section 01330, SUBMITTAL PROCEDURES:

SD-03 Product Data

Erosion Control Material.

Manufacturer's literature including physical characteristics, application and installation instructions for erosion control material.

Delivery.

Delivery schedule.

Plant Establishment Period.

Calendar time period for the plant establishment period. When there is more than one establishment period, the boundaries of the planted areas covered for each period shall be described.

Maintenance Record.

Maintenance work performed, quantity of plant losses, and replacements; and diagnosis of unhealthy plant material.

Application of Pesticide.

Pesticide treatment plan with sequence of treatment work with dates and times. The pesticide trade name, EPA registration number, chemical composition, formulation, concentration of original and diluted material, application rate of active ingredients, method of application, area treated, amount applied; and the name and state license number of the state certified applicator shall be included.

SD-06 Test Reports

Soil Test.

Certified reports of inspections and laboratory tests, prepared by an independent testing agency, including analysis and interpretation of test results. Each report shall be properly identified. Test methods used and compliance with recognized test standards shall be described.

SD-07 Certificates

Plant Material.

Topsoil.

pH Adjuster.

Fertilizer.

Organic Material.

Soil Conditioner.

Mycorrhizal Fungi Inoculum.

Pesticide.

Prior to delivery of materials, certificates of compliance attesting that materials meet the specified requirements. Certified copies of the material certificates shall include the following.

- a. Plant Material: Classification, botanical name, common name, size, quantity by species, and location where grown.
- b. Topsoil: Particle size, pH, organic matter content, textural class, soluble salts, chemical, mechanical and plant growth analyses.
- c. pH Adjuster: Sieve analysis and calcium carbonate equivalent.
- d. Fertilizer: Chemical analysis and composition percent.
- e. Organic Material: Composition and source.
- f. Soil Conditioner: Composition and source.
- g. Mycorrhizal Fungi Inoculum: Plant material treated.
- h. Pesticide. EPA registration number and registered uses.

#### SD-10 Operation and Maintenance Data

##### Maintenance Instructions.

Instruction for year-round care of installed plant material.

### 1.3 SOURCE INSPECTIONS

The nursery or source of plant material and the source of delivered topsoil shall be subject to inspection.

### 1.4 DELIVERY, INSPECTION, STORAGE, AND HANDLING

#### 1.4.1 Delivery

A delivery schedule shall be provided at least 10 calendar days prior to the first day of delivery.

##### 1.4.1.1 Plant Material Identification

Plant material shall be identified with attached, durable, waterproof labels and weather-resistant ink, stating the correct botanical plant name and size. Ten (10) percent of the cuttings from each plant species shall be identified with attached durable waterproof labels stating the correct plant botanical name in weather resistant ink.

##### 1.4.1.2 Protection During Delivery

Plant material and cuttings shall be protected during delivery to prevent desiccation and damage to the branches, trunk, root system, or earth ball. Branches shall be protected by tying-in. Exposed branches including cuttings shall be covered during transport.

##### 1.4.1.3 Delivered Topsoil

Prior to the delivery of any topsoil, the availability of topsoil shall be

verified in paragraph TOPSOIL. A soil test shall be provided for delivered topsoil.

#### 1.4.1.4 Soil Amendments

Soil amendments shall be delivered to the site in the original, unopened containers bearing the manufacturer's chemical analysis. In lieu of containers, soil amendments may be furnished in bulk. A chemical analysis shall be provided for bulk deliveries.

#### 1.4.1.5 Pesticide Material

Pesticide material shall be delivered to the site in the original, unopened containers bearing legible labels indicating the Environmental Protection Agency (EPA) registration number and the manufacturer's registered uses.

#### 1.4.2 Inspection

Plant material shall be well shaped, vigorous and healthy with a healthy, well branched root system, free from disease, harmful insects and insect eggs, sun-scald injury, disfigurement or abrasion. Plant material shall be checked for unauthorized substitution and to establish nursery grown status. Plant material showing desiccation, abrasion, sun-scald injury, disfigurement, or unauthorized substitution shall be rejected. The plant material shall exhibit typical form of branch to height ratio; and meet the caliper and height measurements specified. Plant material that measures less than specified, or has been poled, topped off or headed back, shall be rejected. Container-grown plant material shall show new fibrous roots and the root mass shall contain its shape when removed from the container. Plant material with broken or cracked balls; or broken containers shall be rejected. Plant cuttings shall be inspected upon arrival at the planting site by the Contracting Officer for conformity to the plans and specifications. Any unacceptable plant cuttings shall be removed from the project site. Other materials shall be inspected for compliance with paragraph PRODUCTS. Open soil amendment containers or wet soil amendments shall be rejected. Topsoil that contains slag, cinders, stones, lumps of soil, sticks, roots, trash or other material larger than 1-1/2 inch diameter shall be rejected. Topsoil that contains viable plant material and plant parts shall be rejected. Unacceptable material shall be removed from the job site.

#### 1.4.3 Storage

##### 1.4.3.1 Plant Material Storage

Plant material not installed on the day of arrival at the site shall be stored and protected in designated areas. Plant material shall not be stored longer than 30 days. Plant material shall be protected from direct exposure to wind and sun. All plant material shall be kept in a moist condition by watering with a fine mist spray until installed. Plant cuttings shall be planted within 24 hours of collection or within four (4) days if properly stored. To properly store cuttings, the Contractor shall submerge the bottom two-thirds in water and shall cover them with a dark cloth. The "bottom" of a cutting is the end with the angled cut (see

drawings).

#### 1.4.3.2 Other Material Storage

Storage of other material shall be in designated areas. Soil amendments shall be stored in dry locations and away from contaminants. Chemical treatment material shall be stored according to manufacturer's instructions and not with planting operation material.

#### 1.4.4 Handling

Plant material shall not be injured in handling. Cracking or breaking the earth ball of plant material shall be avoided. Plant material shall not be handled by the trunk or stems. Materials shall not be dropped from vehicles.

### 1.5 WARRANTY

Furnished plant material shall have a warranty for plant growth to be in a vigorous growing condition for a minimum 12 month period. A minimum 12 month calendar time period for the warranty of plant growth shall be provided regardless of the contract time period. When plant material is determined to be unhealthy in accordance with paragraph PLANT ESTABLISHMENT PERIOD, it shall be replaced once under this warranty.

## PART 2 PRODUCTS

### 2.1 PLANT MATERIAL

#### 2.1.1 Plant Material Classification

The plant material shall be nursery grown stock conforming to ANLA Z60.1 and shall be the species specified.

#### 2.1.2 Plant Schedule

The plant schedule shall provide botanical names as included in one or more of the publications listed under "Nomenclature" in ANLA Z60.1.

#### 2.1.3 Substitutions

Substitutions will not be permitted without written request and approval from the Contracting Officer.

#### 2.1.4 Quality

Well shaped, well grown, vigorous plant material having healthy and well branched root systems in accordance with ANLA Z60.1 shall be provided. Plant material shall be provided free from disease, harmful insects and insect eggs, sun-scald injury, disfigurement and abrasion. Plant material shall be free of shock or damage to branches, trunk, or root systems, which may occur from the digging and preparation for shipment, method of shipment, or shipment. Plant quality is determined by the growing conditions; method of shipment to maintain health of the root system; and



growth of the trunk and crown as follows.

#### 2.1.5 Growing Conditions

Plant material shall be native to or well-suited to the growing conditions of the project site. Plant material shall be grown under climatic conditions similar to those at the project site. Source plants for the collection of cuttings shall be "mature" plants existing within the project site or within the limits of Murrita Creek within one (1) mile up or down stream of the project site. If cuttings are not available in the specified quantities for the project, the contractor shall be required to identify additional plant sources. Alternate collection locations must be approved by the Contracting Officer with all collected cuttings grown under climatic conditions similar to those in the locality of the project site. All cuttings shall be taken from legal collection sites.

#### 2.1.6 Method of Shipment to Maintain Health of Root System

##### 2.1.6.1 Container-Grown Plant Material

Container size shall be in accordance with ANLA Z60.1. Plant material shall be grown in a container over a duration of time for new fibrous roots to have developed and for the root mass to retain its shape and hold together when removed from the container. Container-grown plant material shall be inoculated with mycorrhizal fungi during germination in the nursery. Before shipment the root system shall be dipped in gels containing mycorrhizal fungi inoculum. The container shall be sufficiently rigid to hold ball shape and protect root mass during shipping.

#### 2.1.7 Growth of Trunk and Crown

##### 2.1.7.1 Deciduous Trees

A height to caliper relationship shall be provided in accordance with ANLA Z60.1. Height of branching shall bear a relationship to the size and species of tree specified and with the crown in good balance with the trunk. The trees shall not be "poled" or the leader removed.

- a. Single stem: The trunk shall be reasonably straight and symmetrical with crown and have a persistent main leader.
- b. Multi-stem: All countable stems, in aggregate, shall average the size specified. To be considered a stem, there shall be no division of the trunk which branches more than 6 inches from ground level.

##### 2.1.7.2 Shrubs

Shrubs shall have the height and number of primary stems recommended by ANLA Z60.1. Acceptable plant material shall be well shaped, with sufficient well-spaced side branches, and recognized by the trade as typical for the species grown in the region of the project.

##### 2.1.7.3 Coniferous Evergreen Plant Material

Coniferous Evergreen plant material shall have the height-to-spread ratio recommended by ANLA Z60.1. The coniferous evergreen trees shall not be "poled" or the leader removed. Acceptable plant material shall be exceptionally heavy, well shaped and trimmed to form a symmetrical and tightly knit plant. The form of growth desired shall be as indicated.

#### 2.1.7.4 Broadleaf Evergreen Plant Material

Broadleaf evergreen plant material shall have the height-to-spread ratio recommended by ANLA Z60.1. Acceptable plant material shall be well shaped and recognized by the trade as typical for the variety grown in the region of the project.

#### 2.1.7.5 Ground Cover and Vine Plant Material

Ground cover and vine plant material shall have the minimum number of runners and length of runner recommended by ANLA Z60.1. Plant material shall have heavy, well developed and balanced crown with vigorous, well developed root system and shall be furnished in containers.

#### 2.1.7.6 Plant Cuttings

Existing source plants utilized for the collection of cuttings shall be vigorous and healthy plants, typical of the species, and shall be free from disease, harmful insects and insect eggs. No more than twenty (20) percent of an individual plant's trunk/branch mass shall be collected for cuttings.

Cuttings shall be healthy, free from disease, harmful insects and insect eggs, sun-scald or other injury, disfigurement, abrasion and as specified herein.

Cuttings shall be cut from the source plant using sharp pruning shears and/or tree saw. Cuttings shall not be broken off or stripped from the source plant.

#### 2.1.8 Plant Material Size

Plant material shall be furnished in sizes indicated. Plant material larger in size than specified may be provided at no additional cost to the Government.

#### 2.1.9 Plant Material Measurement

Plant material measurements shall be in accordance with ANLA Z60.1.

#### 2.2 TOPSOIL

Topsoil shall be as defined in ASTM D 5268. When available, the topsoil shall be the existing surface soil stripped and stockpiled onsite. When additional topsoil is required beyond the available topsoil from the stripping operation, topsoil shall be delivered and amended as recommended by the soil test for the plant material specified. Topsoil shall be free from slag, cinders, stones, lumps of soil, sticks, roots, trash or other

material over a minimum 1-1/2 inch diameter. Topsoil shall be free from viable plants and plant parts.

## 2.3 SOIL AMENDMENTS

Soil amendments shall consist of pH adjuster, fertilizer, organic material and soil conditioner meeting the following requirements.

### 2.3.1 pH Adjuster

Agricultural gypsum shall be commercially packaged, free flowing, of a finely ground form and an agricultural grade, minimum ninety-two percent (92%) calcium sulfate by volume, free of any toxic material. One hundred percent (100%) of the ground material shall pass through a ten (10) mesh screen and at least fifty percent (50%) of the material shall pass through a 100-mesh screen.

#### 2.3.1.1 Agricultural Sulfur

Agricultural sulfur shall be first quality commercial grade, commercially packaged, free flowing, of a flour of sulfur finely ground form

### 2.3.2 Fertilizer

Fertilizer shall be commercial grade, free flowing, uniform in composition and conforming to FS O-F-241 and CID A-A-1909.

#### Fertilizer 1:

Nitrogen	5%
Phosphoric Acid	3%
Water Soluble Potash	1%
Humus (composted organic and mineral matter)	50%
Humic Acids (derived from compost)	15%
Soluble Metallic Iron	1%

#### Fertilizer 2 based in a four (4) to six (6) month release form:

Coated Slow Release Nitrogen*	9%
Urea Nitrogen	2%
Available Phosphoric Acid**	8%
Soluble Potash***	8%
Humus (composted organic and mineral matter)	25%
Humic Acid (derived from compost)	5%
Iron (derived from iron sulfate)	2%
Manganese (derived from manganese sulfate)	.05%
Zinc (derived from zinc sulfate)	.05%
Sulfur	7%

\* derived from sulfur coated urea (controlled release)

\*\* derived from triple super phosphate

\*\*\* derived from compost and muriate of potash

## 2.4 Erosion Control Material

Soil erosion control material shall be heavy, twisted jute mesh weighing

approximately 1.22 pounds per linear yard and four feet (4') wide with mesh openings of approximately three inch (3") square. Deviation from this requirement shall be approved by the Contracting Officer.

Erosion control anchor material shall be as recommended by the manufacturer.

## 2.5 WOOD STAKING MATERIAL

Wood stakes shall be treated 2" diameter lodge pole or 2" X 2" hardwood or fir; rough sawn; free from knots, rot, cross grain, or other defects that would impair their strength as indicated on the project drawings.

## 2.6 MYCORRHIZAL FUNGI INOCULUM

Mycorrhizal fungi inoculum shall be composed of multiple-fungus inoculum as recommended by the manufacturer for the plant material specified.

## 2.7 WATER

Water and the coordination for obtaining the water shall be the responsibility of the Contractor. The contractor shall pay all water service fees throughout the contract period. Water shall not contain elements toxic to plant life.

## 2.8 DECOMPOSED WOOD DERIVATIVES

Decomposed wood derivatives shall be ground bark, sawdust, or other wood waste material free of stones, sticks, and toxic substances harmful to plants and stabilized with nitrogen and having the following properties:

Particle Size	Minimum % by Weight Passing
No. 4 mesh screen	95
No. 8 mesh screen	80
Nitrogen Content	Minimum % Based on Dry Weight
Redwood Sawdust	0.5
Fir Sawdust	0.7
Fir or Pine Bark	1.0

## 2.9 PESTICIDE

Pesticide shall be insecticide, herbicide, fungicide, nematocide, rodenticide or miticide. For the purpose of this specification a soil fumigant shall have the same requirements as a pesticide. The pesticide material shall be EPA registered and approved.

# PART 3 EXECUTION

## 3.1 INSTALLING PLANT MATERIAL TIME AND CONDITIONS

### 3.1.1 Deciduous Plant Material Time

When approved by the Contracting Officer plant material shall be installed

from November 1st to April 15th.

### 3.1.2 Plant Material Conditions

Planting operations shall be performed only during periods when beneficial results can be obtained. When drought, excessive moisture, frozen ground or other unsatisfactory conditions prevail, the work shall be stopped when directed. When special conditions warrant a variance to the planting operations, proposed planting times shall be submitted for approval.

### 3.1.3 Tests

#### 3.1.3.1 Percolation Test

Test for percolation shall be done to determine positive drainage of plant pits. The Contracting Officer shall be notified in writing of all soil and drainage conditions detrimental to growth of plant material and shall submit proposal for correcting the condition.

#### 3.1.3.2 Soil Test

Delivered topsoil shall be tested in accordance with ASTM D 5268 and ASTM D 4972 for determining the particle size, pH, organic matter content, textural class, chemical analysis, soluble salts analysis, mechanical and growth analysis. Sample collection onsite shall be random over the entire site. Sample collection for stockpiled topsoil shall be at different levels in the stockpile. The soil shall be free from debris, noxious weeds, toxic substances, or other materials harmful to plant growth.

### 3.2 SITE PREPARATION

#### 3.2.1 Finished Grade, Topsoil and Underground Utilities

The Contractor shall verify that finished grades are as indicated on drawings, and that the placing of topsoil, the smooth grading, and the compaction requirements have been completed in accordance with Section 02921 HYDROSEEDING and Section 02316 EXCAVATION, TRENCHING, AND BACKFILLING FOR UTILITIES SYSTEMS, prior to the commencement of the planting operation. The location of underground utilities and facilities in the area of the planting operation shall be verified. Damage to underground utilities and facilities shall be repaired at the Contractor's expense.

#### 3.2.2 Layout

Mitigation (riparian) plant locations shall be flagged on site. A flag for each plant shall be located by the contractor and approved by the contracting officer prior to plant installation. A different colored flag will be assigned to each plant species for identification. Plant material locations may be adjusted to meet field conditions.

#### 3.2.3 Protecting Existing Vegetation

Existing trees, shrubs, and plant beds that are to be preserved shall be protected during planting operations.

### 3.3 EXCAVATION

#### 3.3.1 Obstructions Below Ground

When obstructions below ground affect the work, proposed adjustments to plant material location, type of plant and planting method shall be submitted for approval.

#### 3.3.2 Turf Removal

Where the planting operation occurs in an existing lawn area, the turf shall be removed from the excavation area to a depth that will ensure the removal of the entire root system.

#### 3.3.3 Plant Pits

Plant pits shall be dug to produce vertical sides and flat, uncompacted bottoms. When pits are dug with an auger and the sides of the pits become glazed, the glazed surface shall be scarified. The size of plant pits shall be as shown on the contract drawings.

### 3.4 INSTALLATION

#### 3.4.1 Setting Plant Material

Plant material shall be set plumb and held in position until sufficient soil has been firmly placed around root system or cutting. In relation to the surrounding grade, the plant material shall be set even with the grade at which it was grown or as shown on the drawings. The cuttings shall be six(6) feet in length, and 3/8-inch to 1/2-inch in diameter. The cuttings shall be planted with the bottom end (angled cut) down, four (4) feet in the ground in augered planting pits, so that two (2) feet of the cutting is above ground and then backfilled, in accordance with the Planting Detail.

Salix plantings shall be planted throughout the channel invert mitigation (riparian) area in groupings of fifteen (15) to forty (40). The plants shall be spaced at twelve (12) feet on-center, triangular spacing. Planting density shall be per acre and as shown on the drawings. Quantities shall be as shown on the drawings.

Baccharis salicifolia (Mulefat) cuttings shall be planted throughout the channel invert mitigation (riparian) area surrounding the Salix plantings in groupings of thirty (30) to eighty (80). The cuttings shall be spaced at eight (8) feet on-center, triangular spacing. Planting density shall be per acre and as shown on the drawings. Quantities shall be as shown on the drawings.

Fremont's Cottonwood and Western Sycamore shall be planted throughout the channel invert mitigation (riparian) area in groupings of two (2) and three (3). The plants shall be spaced ten (10) to sixteen (16) feet from each other in the groupings equally spaced between the Salix and/or Baccharis plantings. Planting density shall be as shown on the drawings. Quantities shall be as shown on the drawings.

Mexican elderberry shall be planted throughout the mitigation (riparian) area in groupings of two (2) and three (3). The plants shall be spaced twenty feet (20) from each other in the groupings equally spaced between the other plants. Planting density shall be as shown on the drawings. Quantities shall be as shown on the drawings.

All other mitigation plantings shall be placed in groupings of thirty (30) to eighty (80). The plants shall be spaced at three (3) to four (4) feet on-center, triangular spacing. Planting density shall be as shown on the drawings. Quantities shall be as shown on the drawings.

#### 3.4.2 Backfill Soil Mixture

The backfill soil shall be 100% native site soil that has been cleared of all debris and rock and broken up and made friable.

The following additives shall be mass blended thoroughly into the backfill soil mixture at the time of planting at the following rates per cubic yard of soil and all plants shall be thoroughly watered immediately upon completion of installation:

10 pounds	Fertilizer 1
2 pounds	Fertilizer 2
1/2 pound	Agricultural Sulfur
3 pounds	Agricultural Gypsum

#### 3.4.3 Adding Mycorrhizal Fungi Inoculum

Mycorrhizal fungi inoculum shall be added as recommended by the manufacturer for the plant material specified.

#### 3.4.4 Backfill Procedure

Prior to backfilling, all metal, wood, and synthetic products shall be removed avoiding damage to the root system. The backfill procedure shall remove air pockets from around the root system. Additional requirements are as follows.

##### 3.4.4.1 Container-Grown Plant Material

The plant material shall be carefully removed from containers. Prior to setting the plant in the pit, a maximum 1/4 depth of the root mass, measured from the bottom, shall be spread apart to promote new root growth.

##### 3.4.4.2 Watering Basin

A watering basin shall be formed as shown on the project drawings with a minimum 4 inch depress basin around the plant pit to aid in water retention and to provide soil for settling adjustments.

#### 3.4.5 Plant Bed

Plant material shall be set in plant beds according to the drawings.

Backfill soil mixture shall be placed on previously scarified subsoil to completely surround the root balls, and shall be brought to a smooth and even surface, blending to existing areas. Watering basin shall be provided as shown on the project drawings.

#### 3.4.6 Watering

Plant pits and plant beds shall be watered immediately after backfilling, until completely saturated.

### 3.5 FINISHING

#### 3.5.1 Plant Material

Prior to placing mulch, the installed area shall be raked and smoothed while maintaining the watering basin.

#### 3.5.2 Placing Erosion Control Material

Jute mesh shall be placed as shown on the drawings and in accordance with the manufacturer's recommendations. Jute mesh shall be installed on all channel slopes and on back slopes 2:1 and greater. Placement of the erosion control material shall be accomplished without damage to installed material or without deviation to finished grade.

#### 3.5.3 Placing Mulch

The placement of mulch shall occur a maximum 48 hours after planting. Contractor shall cover the rootball and backfill plant pit area with a two inch (2") layer of decomposed wood derivative. Mulch shall be kept out of the crowns of shrubs, ground cover, and vines and shall be kept off buildings, sidewalks and other facilities.

#### 3.5.4 Pruning (non mitigation areas)

Pruning shall be accomplished by trained and experienced personnel (min. 5 years of documented experience in the field). The pruning of trees shall be in accordance with standard landscape practice. The typical growth habit of individual plant material shall be retained. Dead and broken material shall be pruned. Clean cuts shall be made flush with the parent trunk. Improper cuts, stubs, dead and broken branches shall be removed. "Headback" cuts at right angles to the line of growth will not be permitted. Trees shall not be poled or the leader removed, nor shall the leader be pruned or "topped off".

### 3.6 MAINTENANCE DURING PLANTING OPERATION

Installed plant material including cuttings shall be maintained in a healthy growing condition. Maintenance operations shall begin immediately after each plant is installed to prevent desiccation and shall continue until the plant establishment period commences. Installed areas shall be kept free of trash, weeds, grass, and other undesired vegetation. The maintenance includes maintaining the erosion control material, mulch,



watering, and adjusting settling.

### 3.7 APPLICATION OF PESTICIDE

When application of a pesticide becomes necessary to remove a pest or disease, a pesticide treatment plan shall be submitted and coordinated with the installation pest management program.

#### 3.7.1 Technical Representative

The certified installation pest management coordinator shall be the technical representative, and shall be present at all meetings concerning treatment measures for pest or disease control. They may be present during treatment application.

#### 3.7.2 Application

A state certified applicator shall apply required pesticides in accordance with EPA label restrictions and recommendations.

### 3.8 RESTORATION AND CLEAN UP

#### 3.8.1 Restoration

Seeded areas, pavements and facilities that have been damaged from the planting operation shall be restored to original condition at the Contractor's expense.

#### 3.8.2 Clean Up

Excess and waste material shall be removed from the installed area and shall be disposed offsite. Adjacent paved areas shall be cleared.

### 3.9 PLANT ESTABLISHMENT PERIOD

#### 3.9.1 Commencement

The Post-Installation Plant Establishment Period shall commence on the last day of planting operations and shall be in effect for twelve (12) months or at the end of the Hydroseed Establishment Period under Section 02921 HYDROSEEDING which ever is longer. When the planting operation extends more than one season or there is a variance to the planting times, plant establishment periods shall be established for the work completed. Written calendar time period shall be furnished to the Contracting Officer for the beginning of the Plant Establishment Period.

#### 3.9.2 Maintenance During Establishment Period

Maintenance of plant material shall include straightening plant material, straightening stakes; supplementing mulch; pruning dead or broken branch tips; maintaining plant material labels; watering; eradicating weeds, insects and disease; post-fertilization; maintaining the erosion control material; removing and replacing unhealthy plants.

#### 3.9.2.1 Watering Plant Material

All plants shall be watered as necessary to maintain an adequate supply of moisture within the root zone. Run-off, puddling and wilting shall be prevented.

#### 3.9.2.2 Weeding

Weeds in the installed areas shall not be allowed to reach a maximum 3 inches in height before being completely removed, including the root system. The contractor shall ensure that there is enough labor force, which can weed the entire project area within a five day period.

#### 3.9.2.3 Pesticide Treatment

Treatment for disease or pest shall be in accordance with paragraph APPLICATION OF PESTICIDE.

#### 3.9.2.4 Post-Fertilization

- a. Dry fertilizer adhering to plants shall be flushed off. The application shall be timed prior to the advent of winter dormancy. The contractor shall notify the Contracting Officer prior to fertilization operations.
- b. Forty-five (45) calendar days after commencement of establishment, Fertilizer 1 shall be general broadcast in plant pit basin areas at the rate of twenty-five (25) pounds per 1,000 square feet and thoroughly irrigated into plant pits immediately after application.
- c. Fertilizer 2, in the four (4) to six (6) month release formulation shall be broadcast in plant pit basin areas at the rate of fifteen (15) pounds per 1,000 square feet between day 100 and day 110 and thoroughly irrigated into plant pits immediately after application. This application is in addition to the forty-five (45) day application.
- d. Mitigation plantings shall not be fertilized again at any time after installation.

#### 3.9.2.5 Plant Pit Settling

When settling occurs to the backfill soil mixture, additional backfill soil shall be added to the plant pit or plant bed until the backfill level is equal to the surrounding grade. Serious settling that affects the setting of the plant in relation to the maximum depth at which it was grown requires replanting in accordance with paragraph INSTALLATION. The earth berm shall be maintained.

#### 3.9.2.6 Maintenance Record

A record shall be furnished describing the maintenance work performed including but not limited to weeding and watering schedules, irrigation maintenance performed, the quantity of plant losses, diagnosis of the plant loss, and the quantity of replacements made on each site visit. The

contractor shall provide dates, times, and weather conditions, if applicable.

### 3.9.3 Unhealthy Plant Material

A tree shall be considered unhealthy or dead when the main leader has died back, or up to a maximum 25 percent of the crown has died. A shrub shall be considered unhealthy or dead when up to a maximum 25 percent of the plant has died. This condition shall be determined by scraping on a branch area 1/4 inch square, to determine if there is a green cambium layer below the bark. The Contractor shall determine the cause for unhealthy plant material and shall provide recommendations for replacement. Unhealthy or dead plant material shall be removed immediately and shall be replaced as soon as seasonal conditions permit.

### 3.9.4 Replacement Plant Material

Unless otherwise directed, plant material shall be provided for replacement in accordance with paragraph PLANT MATERIAL. Replacement plant material shall be installed in accordance with paragraph INSTALLATION, and recommendations in paragraph PLANT ESTABLISHMENT PERIOD. Plant material shall be replaced in accordance with paragraph WARRANTY. An extended plant establishment period shall not be required for replacement plant material.

### 3.9.5 Maintenance Instructions

Written instructions shall be furnished containing drawings and other necessary information for year-round care of the installed plant material; including, when and where maintenance should occur, and the procedures for plant material replacement.

### 3.9.6 Saline Conditions

During the Establishment Period, the Contractor shall inform the Contracting Officer of plant material which may be experiencing stress due to saline conditions.

## 3.10 FINAL ACCEPTANCE

### 3.10.1 Preliminary Inspection

Prior to the end of the plant establishment period, a preliminary inspection shall be held by the Contracting Officer. Time for the inspection will be established in writing. The quantity and type of plants installed and the acceptability of the plants in accordance with the plant establishment period shall be determined.

### 3.10.2 Final Inspection

A final inspection shall be held by the Contracting Officer at the end of the plant establishment period to determine that deficiencies noted in the preliminary inspection have been corrected. Time for the inspection shall be established in writing. Acceptance of the planting operation is subject to the guarantee of plant growth.

-- End of Section --

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## SECTION 03307

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## SECTION 03307

## CONCRETE FOR MINOR STRUCTURES

## PART 1 GENERAL

## 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

## ACI INTERNATIONAL (ACI)

ACI 305R	(1999) Hot Weather Concreting
ACI 318/318R	(1999) Building Code Requirements for Structural Concrete and Commentary
ACI 347R	(2001) Guide to Formwork for Concrete

## ASTM INTERNATIONAL (ASTM)

ASTM A 185	(2001) Steel Welded Wire Reinforcement, Plain, for Concrete
ASTM A 497	(2001) Steel Welded Wire Reinforcement, Deformed, for Concrete
ASTM A 615/A 615M	(2001b) Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
ASTM C 31/C 31M	(2000e1) Making and Curing Concrete Test Specimens in the Field
ASTM C 33	(2002a) Concrete Aggregates
ASTM C 39	(1993a) Compressive Strength of Cylindrical Concrete Specimens
ASTM C 94	(1994) Ready-Mixed Concrete
ASTM C 143	(1998) Slump of Hydraulic Cement Concrete
ASTM C 150	(2002) Portland Cement
ASTM C 171	(1997a) Sheet Materials for Curing Concrete
ASTM C 172	(1999) Sampling Freshly Mixed Concrete
ASTM C 231	(1997e1) Air Content of Freshly Mixed Concrete by the Pressure Method

ASTM C 260	(2001) Air-Entraining Admixtures for Concrete
ASTM C 309	(1998a) Liquid Membrane-Forming Compounds for Curing Concrete
ASTM C 494/C 494M	(1999a) Chemical Admixtures for Concrete
ASTM C 618	(2001) Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete
ASTM C 685	(2000) Concrete Made by Volumetric Batching and Continuous Mixing
ASTM C 881	(1999) Epoxy-Resin-Base Bonding Systems for Concrete
ASTM C 920	(2002) Elastomeric Joint Sealants
ASTM D 75	(1997) Sampling Aggregates
ASTM D 1752	(1984; R 1996) Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction

U.S. ARMY CORPS OF ENGINEERS (USACE)

COE CRD-C 400	(1963) Requirements for Water for Use in Mixing or Curing Concrete
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1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The "RE" designates that the Resident Office will review the submittal for the Government. Submit the following in accordance with Section 01330, SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Batching and Mixing Equipment.

Batching and mixing equipment will be accepted on the basis of manufacturer's data which demonstrates compliance with the applicable specifications.

Conveying and Placing Concrete.

The methods and equipment for transporting, handling, depositing, and consolidating the concrete shall be submitted prior to the first concrete placement.



## SD-03 Product Data

Air-Entraining Admixture.

Accelerating Admixture.

Water-Reducing or Retarding Admixture.

Curing Materials.

Reinforcing Steel.

Expansion Joint Filler Strips, Premolded.

Joint Sealants - Field Molded Sealants.

Waterstops.

Manufacturer's literature is available from suppliers which demonstrates compliance with applicable specifications for the above materials.

## SD-05 Design Data

Formwork.

Formwork design shall be submitted prior to the first concrete placement.

Concrete Mixture Proportions.

Ten days prior to placement of concrete, the contractor shall submit the mixture proportions that will produce concrete of the quality required. Applicable test reports shall be submitted to verify that the concrete mixture proportions selected will produce concrete of the quality specified.

## SD-07 Certificates

Aggregates.

Aggregates will be accepted on the basis of certificates of compliance and test reports that show the material(s) meets the quality and grading requirements of the specifications under which it is furnished.

Cementitious Materials.

Certificates of compliance attesting that the concrete materials meet the requirements of the specifications shall be submitted. Cementitious material will be accepted on the basis of a manufacturer's certificate of compliance, accompanied by mill test reports that the material(s) meet the requirements of the specification under which it is furnished.

Waybills and Delivery Tickets.

Copies of waybills or delivery tickets for materials during the progress of

the work shall be submitted for review and approval. Before the final payment is allowed, waybills and certified delivery tickets shall be furnished for all material used in the construction.

### 1.3 DESIGN AND PERFORMANCE REQUIREMENTS

The Government will maintain the option to sample and test joint sealer, joint filler material, waterstop, aggregates and concrete to determine compliance with the specifications. The Contractor shall provide facilities and labor as may be necessary to assist the Government in procurement of representative test samples. Samples of aggregates will be obtained at the point of batching in accordance with ASTM D 75. Concrete will be sampled in accordance with ASTM C 172. Slump and air content will be determined in accordance with ASTM C 143 and ASTM C 231, respectively, when cylinders are molded. Compression test specimens will be made, cured, and transported in accordance with ASTM C 31/C 31M. Compression test specimens will be tested in accordance with ASTM C 39. Samples for strength tests will be taken not less than once each shift in which concrete is produced from each class of concrete required. A minimum of three specimens will be made from each sample; two will be tested at 28 days for acceptance, and one will be tested at 7 days for information.

#### 1.3.1 Strength

Acceptance test results will be the average strengths of two specimens tested at 28 days. The strength of the concrete will be considered satisfactory so long as the average of all set of three consecutive acceptance test (average of two cylinder results) equal or exceed the specified compressive strength,  $f'_c$ , and no individual acceptance test result falls below  $f'_c$  by more than 500 psi.

#### 1.3.2 Construction Tolerances

A class "B" finish will be applied to all surfaces which will be exposed to flowing water. A Class "D" finish shall apply to all surfaces which will be permanently concealed after construction. A Class "C" finish shall apply to all surfaces except those specified to receive a Class "B" or "D" finish. The surface requirements for the classes of finish required shall be as specified in ACI 347R.

#### 1.3.3 Concrete Mixture Proportions

Concrete mixture proportions shall be the responsibility of the Contractor. Prior to concrete placement, the Contractor shall submit mixture proportions for approval that will produce concrete of the qualities required. Mixture proportions shall include the dry weights of cementitious material(s); the nominal maximum size of the coarse aggregate; the specific gravities, absorptions, and saturated surface-dry weights of fine and coarse aggregates; the quantities, types, and names of admixtures; and quantity of water per cubic yard of concrete. All materials included in the mixture proportions shall be of the same type and from the same source as will be used on the project. Minimum compressive strengths and maximum water/cement ratios shall be as indicated hereinafter. The maximum nominal size coarse aggregate shall be 1 inch for wall and piers, 1-1/2

inches for footings and pile caps, in accordance with ACI 318/318R. The air content shall be between 4 and 6 percent. The slump shall be between 2 and 5 inches. The minimum compressive strength ( $f'_c$ ) for all concrete shall be 3,000 psi at 28 days with a maximum water cement ratio of 0.45.

## PART 2 PRODUCTS

### 2.1 MATERIALS

#### 2.1.1 Cementitious Materials

Cementitious materials shall conform to the appropriate specifications listed:

##### 2.1.1.1 Portland Cement

ASTM C 150, Type II, low alkali.

##### 2.1.1.2 Pozzolan

Pozzolan shall conform to ASTM C 618, Class F, except that the loss on ignition shall be limited to 6 percent.

#### 2.1.2 Aggregates

Aggregates shall meet the quality and grading requirements of ASTM C 33, Class Designations 4M or better.

#### 2.1.3 Admixtures

Admixtures to be used, when required or approved, shall comply with the appropriate specification listed. Chemical admixtures that have been in storage at the project site for longer than 6 months or that have been subjected to freezing shall be retested at the expense of the contractor at the request of the Contracting Officer and shall be rejected if test results are not satisfactory.

##### 2.1.3.1 Air-Entraining Admixture

Air-entraining admixture shall meet the requirements of ASTM C 260.

##### 2.1.3.2 Accelerating Admixture

Accelerators shall meet the requirements of ASTM C 494/C 494M, Type C or E, except that calcium chloride or admixtures containing calcium chloride shall not be used.

##### 2.1.3.3 Water-Reducing or Retarding Admixture

Water-reducing or retarding admixture shall meet the requirements of ASTM C 494/C 494M, Type A, B, or D.

#### 2.1.4 Water

Water for mixing and curing shall be fresh, clean, potable, and free from injurious amounts of oil, acid, salt, or alkali, except that unpotable water may be used if it meets the requirements of COE CRD-C 400.

#### 2.1.5 Reinforcing Steel

##### 2.1.5.1 Reinforcing Steel Bars and Dowels

Reinforcing steel bar and Dowels shall conform to the requirements of ASTM A 615/A 615M, Grade 60. Details of reinforcement not shown shall be in accordance with ACI 318/318R, Chapters 7 and 12.

##### 2.1.5.2 Steel Welded Wire Reinforcement

Steel welded wire reinforcement shall conform to the requirements of ASTM A 185 or ASTM A 497 with wire sizes and spacings as shown on the drawings. For wire with a specified yield strength ( $f_y$ ) exceeding 60,000 psi,  $f_y$  shall be the stress corresponding to a strain of 0.35 percent.

##### 2.1.6 Expansion Joint Filler Strips, Premolded

Expansion joint filler strips, premolded shall be sponge rubber conforming to ASTM D 1752, Type I.

##### 2.1.7 Joint Sealants - Field Molded Sealants

Joint sealants - field molded sealants shall conform to ASTM C 920, Type M, Grade NS, Class 25, use NT for vertical joints and Type M, Grade P, Class 25, use T for horizontal joints. Bond-breaker material shall be polyethylene tape, coated paper, metal foil, or similar type materials. The backup material shall be compressible, nonshrink, nonreactive with the sealant, and a nonabsorptive material such as extruded butyl or polychloroprene foam rubber. Immediately prior to installation of field-molded sealants, the joint shall be cleaned of all debris and further cleaned using water, chemical solvents, or other means as recommended by the sealant manufacturer or directed.

##### 2.1.8 Formwork

The design and engineering of the formwork as well as its construction, shall be the responsibility of the Contractor.

##### 2.1.9 Form Coatings

Forms for exposed surfaces shall be coated with a bonding, nonstaining form oil, which shall be applied shortly before concrete is placed. The form coating will not affect the wetting of concrete surfaces to be cured with water or curing compounds.

##### 2.1.10 Curing Materials

Curing materials shall conform to the following requirements.

#### 2.1.10.1 Impervious Sheet Materials

Impervious sheet materials, ASTM C 171, type optional, except polyethylene film, if used, shall be white opaque.

#### 2.1.10.2 Membrane-Forming Curing Compound

ASTM C 309, Type 1-D.

#### 2.1.11 Epoxy Resin

All epoxy resin materials shall be of two component materials conforming to the requirement of ASTM C 881. The materials for bonding freshly mixed Portland cement concrete or mortar or freshly mixed epoxy resin concrete to hardened concrete shall be Type II, Grade 2. The epoxy resin materials use as patching materials for complete filling of spalls, wide cracks, and other voids; embedding dowels and anchor bolts with concrete shall be Type IV, Grade 3.

### PART 3 EXECUTION

#### 3.1 PREPARATION

##### 3.1.1 General

Construction joints shall be prepared to expose coarse aggregate, and the surface shall be clean, damp, and free of laitance. Ramps and walkways, as necessary, shall be constructed to allow safe and expeditious access for concrete and workmen. Snow, ice, standing or flowing water, loose particles, debris, and foreign matter shall have been removed. Earth foundations shall be satisfactorily compacted. Spare vibrators shall be available. The entire preparation shall be accepted by the Government prior to placing.

##### 3.1.2 Embedded Items

Reinforcement shall be secured in place; joints, anchors, and other embedded items shall have been positioned. Internal ties shall be arranged so that when the forms are removed all metal will be not less than 2 inches from concrete surfaces permanently exposed to view or exposed to water on the finished structures. Embedded items shall be free of oil and other foreign matters such as loose coatings or rust, paint, and scale. The embedding of wood in concrete will be permitted only when specifically authorized or directed. All equipment needed to place, consolidate, protect, and cure the concrete shall be at the placement site and in good operating condition.

##### 3.1.3 Formwork Installation

Forms shall be properly aligned, adequately supported, and mortar-tight. The form surfaces shall be smooth and free from irregularities, dents, sags, or holes when used for permanently exposed faces. All exposed joints and edges shall be chamfered, unless otherwise indicated.

#### 3.1.4 Production of Concrete

Ten days prior to placement of concrete, the contractor shall submit the concrete mixture proportions that will produce concrete of the quality required. Applicable test reports shall be submitted to verify that the concrete mixture proportions selected will produce concrete of the quality specified.

##### 3.1.4.1 Ready-Mixed Concrete

Ready-mixed concrete shall conform to ASTM C 94 except as otherwise specified.

##### 3.1.4.2 Concrete Made by Volumetric Batching and Continuous Mixing

Concrete made by volumetric batching and continuous mixing shall conform to ASTM C 685.

##### 3.1.4.3 Batching and Mixing Equipment

The contractor shall have the option of using an on-site batching and mixing facility. The facility shall provide sufficient batching and mixing equipment capacity to prevent cold joints. The method of measuring materials, batching operation, and mixer shall be submitted for review. On-site plant shall conform to the requirements of either ASTM C 94 or ASTM C 685.

#### 3.1.5 Waterstops

Waterstops shall be installed and spliced as directed by the manufacturer.

#### 3.1.6 Drill and Bond Dowels

Holes shall be drilled by methods that will not shatter or damage the concrete adjacent to the hole. The diameter of the drilled hole shall be 1/4 inch larger than the nominal diameter of the dowels. The drilled holes shall be clean and dry at the time of placing the Epoxy Resin bonding material and the steel dowels. Epoxy Resin bonding material and dowel shall completely fill the drilled hole. Dowels that are improperly bonded, as determined by the Contracting Officer, shall be removed. The holes shall be cleaned or new holes shall be drilled and the dowels replaced and securely bonded to the concrete. Removing, redrilling, and replacing improperly bonded dowels shall be performed at the Contractor's expense.

### 3.2 CONVEYING AND PLACING CONCRETE

Conveying and placing concrete shall conform to the following requirements.

#### 3.2.1 General

Concrete placement shall not be permitted when weather conditions prevent proper placement and consolidation without approval. When concrete is mixed and/or transported by a truck mixer, the concrete shall be delivered to the site of the work and discharge shall be completed within 1-1/2 hours

and shall not be placed at temperatures exceeding 85 degrees F. Concrete shall be conveyed from the mixer to the forms as rapidly as practicable by methods which prevent segregation or loss of ingredients. Concrete shall be in place and consolidated within 15 minutes after discharge from the mixer. Concrete shall be deposited as close as possible to its final position in the forms and be so regulated that it may be effectively consolidated in horizontal layers 18 inches or less in thickness with a minimum of lateral movement. The placement shall be carried on at such a rate that the formation of cold joints will be prevented.

### 3.2.2 Consolidation

Each layer of concrete shall be consolidated by internal vibrating equipment. Internal vibration shall be systematically accomplished by inserting the vibrator through the fresh concrete in the layer below at a uniform spacing over the entire area of placement. The distance between insertions shall be approximately 1.5 times the radius of action of the vibrator and overlay the adjacent, just-vibrated area by approximately a few inches. The vibrator shall penetrate rapidly to the bottom of the layer and at least 6 inches into the layer below, if such a layer exists. It shall be held stationary until the concrete is consolidated and then withdrawn slowly at the rate of about 3 inches per second.

### 3.2.3 Cold-Weather Requirements

No concrete placement shall be made when the ambient temperature is below 35 degrees F or if the ambient temperature is below 40 degrees F and falling. Suitable covering and other means as approved shall be provided for maintaining the concrete at a temperature of at least 50 degrees F for not less than 72 hours after placing and at a temperature above freezing for the remainder of the curing period. Salt, chemicals, or other foreign materials shall not be mixed with the concrete to prevent freezing. Any concrete damaged by freezing shall be removed and replaced at the expense of the contractor.

### 3.2.4 Hot-Weather Requirements

When the rate of evaporation of surface moisture, as determined by use of Figure 2.1.5 of ACI 305R, is expected to exceed 0.2 pound per square foot per hour, provisions for windbreaks, shading, fog spraying, or covering with a light-colored material shall be made in advance of placement, and such protective measures shall be taken as quickly as finishing operations will allow.

## 3.3 FORM REMOVAL

Forms shall not be removed before the expiration of 24 hours after concrete placement except where otherwise specifically authorized. Supporting forms and shoring shall not be removed until the concrete has cured for at least 5 days. When conditions on the work are such as to justify the requirement, forms will be required to remain in place for longer periods.

## 3.4 FINISHING

### 3.4.1 General

No finishing or repair will be done when either the concrete or the ambient temperature is below 50 degrees F.

### 3.4.2 Finishing Formed Surfaces

All fins and loose materials shall be removed, and surface defects including tie holes shall be filled. All honeycomb areas and other defects shall be repaired. All unsound concrete shall be removed from areas to be repaired. Surface defects greater than 1/2 inch in diameter and holes left by removal of tie rods in all surfaces not to receive additional concrete shall be reamed or chipped and filled with dry-pack mortar. The prepared area shall be brush-coated with an approved epoxy resin or latex bonding compound or with a neat cement grout after dampening and filled with mortar or concrete. The cement used in mortar or concrete for repairs to all surfaces permanently exposed to view shall be a blend of portland cement and white cement so that the final color when cured will be the same as adjacent concrete.

### 3.4.3 Finishing Unformed Surfaces

All unformed surfaces that are not to be covered by additional concrete or backfill shall be float finished to elevations shown, unless otherwise specified. Surfaces to receive additional concrete or backfill shall be brought to the elevations shown and left as a true and regular surface. Exterior surfaces shall be sloped for drainage unless otherwise shown. Joints shall be carefully made with a jointing tool. Unformed surfaces shall be finished to a tolerance of 3/8 inch for a float finish as determined by a 10 foot straightedge placed on surfaces shown on the plans to be level or having a constant slope. Finishing shall not be performed while there is excess moisture or bleeding water on the surface. No water or cement shall be added to the surface during finishing.

#### 3.4.3.1 Float Finish

Surfaces to be float finished shall be screeded and darbied or bullfloated to eliminate the ridges and to fill in the voids left by the screed. In addition, the darby or bullfloat shall fill all surface voids and only slightly embed the coarse aggregate below the surface of the fresh concrete. When the water sheen disappears and the concrete will support a person's weight without deep imprint, floating should be completed. Floating should embed large aggregates just beneath the surface, remove slight imperfections, humps, and voids to produce a plane surface, compact the concrete, and consolidate mortar at the surface.

#### 3.4.3.2 Broom Finish

A broom finish shall be applied to horizontal surfaces in the underpass and at other locations as directed. The concrete shall be screeded and floated to required finish plane with no coarse aggregate visible. After surface moisture disappears, the surface shall be broomed or brushed with a broom or fiber bristle brush in a direction transverse to that of the main traffic or as directed.



#### 3.4.3.3 Expansion and Contraction Joints

Expansion and contraction joints shall be made in accordance with the details shown or as otherwise specified. Provide 12 mm (1/2 inch) thick transverse expansion joints where new work abuts existing concrete.

#### 3.5 CURING AND PROTECTION

Beginning immediately after placement and continuing for at least 7 days, all concrete shall be cured and protected from premature drying, extremes in temperature, rapid temperature change, freezing, mechanical damage, and exposure to rain or flowing water. All materials and equipment needed for adequate curing and protection shall be available and at the site of the placement prior to the start of concrete placement. Preservation of moisture for concrete surfaces not in contact with forms shall be accomplished by one of the following methods:

- a. Application of impervious sheet material conforming to ASTM C 171. However, impervious sheet shall not be allowed for walls and piers concrete.
- b. Application of membrane-forming curing compound conforming to ASTM C 309, Type 1-D shall be accomplished in accordance with manufacturer's instructions.

The preservation of moisture for concrete surfaces placed against wooden forms shall be accomplished by keeping the forms continuously wet for 7 days. If forms are removed prior to end of the required curing period, other curing methods shall be used for the balance of the curing period. During the period of protection removal, the temperature of the air in contact with the concrete shall not be allowed to drop more than 25 degrees F within a 24 hour period.

#### 3.6 TESTS AND INSPECTIONS

##### 3.6.1 General

The individuals who sample and test concrete as required in this specification shall have demonstrated a knowledge and ability to perform the necessary test procedures equivalent to the ACI minimum guidelines for certification of Concrete Field Testing Technicians, Grade I.

##### 3.6.2 Inspection Details and Frequency of Testing

###### 3.6.2.1 Preparations for Placing

Foundation or construction joints, forms, and embedded items shall be inspected in sufficient time prior to each concrete placement by the Contractor to certify that it is ready to receive concrete.

###### 3.6.2.2 Air Content

Air content shall be checked at least twice during each shift that concrete

is placed for each class of concrete required. Samples shall be obtained in accordance with ASTM C 172 and tested in accordance with ASTM C 231.

#### 3.6.2.3 Slump

Slump shall be checked twice during each shift that concrete is produced for each class of concrete required. Samples shall be obtained in accordance with ASTM C 172 and tested in accordance with ASTM C 143.

#### 3.6.2.4 Consolidation and Protection

The Contractor shall ensure that the concrete is properly consolidated, finished, protected, and cured.

#### 3.6.3 Action Required

##### 3.6.3.1 Placing

The placing foreman shall not permit placing to begin until he has verified that an adequate number of acceptable vibrators, which are in working order and have competent operators, are available. Placing shall not be continued if any pile is inadequately consolidated.

##### 3.6.3.2 Air Content

Whenever a test result is outside the specification limits, the concrete shall not be delivered to the forms and an adjustment shall be made to the dosage of the air-entrainment admixture.

##### 3.6.3.3 Slump

Whenever a test result is outside the specification limits, the concrete shall not be delivered to the forms and an adjustment should be made in the batch weights of water and fine aggregate. The adjustments are to be made so that the water-cement ratio does not exceed that specified in the submitted concrete mixture proportion.

#### 3.6.4 Reports

The results of all tests and inspections conducted at the project site shall be reported informally at the end of each shift and in writing weekly and shall be delivered within 3 days after the end of each weekly reporting period. All concrete reports, including compressive strength, concrete temperatures, ambient temperatures, slump, air content, mix design number, test number and location of concrete placement shall be submitted in a spreadsheet format and on computer disk(s) to the Contracting Officer. The Contracting Officer has the right to examine all Contractor quality control records.

#### 3.7 Waybills and Delivery Tickets

Copies of waybills or delivery tickets shall be submitted to the Contracting Officer's Representative, during the progress of the work. The Contractor shall furnish the Contracting Officer's Representative scale

tickets for each load of material weighed; these tickets shall include tare weight, identification mark of each vehicle weighed, plus date, time, and location of the loading. Tickets shall be furnished at the point and time individual loads arrive at the work site. A master log of all vehicle loading shall be furnished for each day of loading operation. The Contractor shall file with the Contracting Officer's Representative the master log of loadings, certified waybills and/or certified tickets, within 24 hours of material delivery. Prior to the final payment, the Contractor shall furnish written certification that the material recorded on the submitted waybills and/or certified tickets was actually used in the construction covered by the contract.

-- End of Section --

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## SECTION 05500

## MISCELLANEOUS METAL

## PART 1 GENERAL

## 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

## AMERICAN WELDING SOCIETY (AWS)

AWS D1.1 (2000) Structural Welding Code - Steel

## ASME INTERNATIONAL (ASME)

ASME B16.3 (1998) Malleable Iron Threaded Fittings

ASME B18.2.1 (1996) Square and Hex Bolts and Screws  
(Inch Series)

ASME B18.2.2 (1987; R 1999) Square and Hex Nuts

## ASTM INTERNATIONAL (ASTM)

ASTM A 36/A 36M (2001) Carbon Structural Steel

ASTM A 48/A 48M (2000) Gray Iron Castings

ASTM A 53/A 53M (2001) Pipe, Steel, Black and Hot-Dipped,  
Zinc-Coated, Welded and Seamless

ASTM A 123/A 123M (2001a) Zinc (Hot-Dip Galvanized) Coatings  
on Iron and Steel Products

ASTM A 320/A 320M (2001) Alloy/Steel Bolting Materials for  
Low-Temperature Service

ASTM B 32 (2000) Solder Metal

ASTM B 221 (2000) Aluminum and Aluminum-Alloy  
Extruded Bars, Rods, Wire, Profiles, and  
Tubes

ASTM B 221M (2000) Aluminum and Aluminum-Alloy  
Extruded Bars, Rods, Wire, Profiles, and  
Tubes (Metric)

ASTM C 478 (1997) Precast Reinforced Concrete Manhole

## Sections

ASTM C 497	(1998) Concrete Pipe, Manhole Sections, or Tile
ASTM F 593	(2001) Stainless Steel Bolts, Hex Cap Screws, and Studs
ASTM F 594	(2001) Stainless Steel Nuts

## CALIFORNIA DEPARTMENT OF TRANSPORTATION (CDT)

## CALTRANS Highway Requirements

## U.S. GENERAL SERVICES ADMINISTRATION (GSA)

CID A-A-60005	(Basic) Frames, Covers, Gratings, Steps, Sump and Catch Basin, Manhole
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## 1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The "RE" designates that the Resident Office will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

## SD-02 Shop Drawings

## Miscellaneous Metal Items.

Detail drawings indicating material thickness, type, grade, and class; dimensions; and construction details. Drawings shall include catalog cuts, erection details, manufacturer's descriptive data and installation instructions, and templates. Detail drawings for the following items: trash rack structure, stilling well safety cage, stilling well access door, plates, and appurtenances, access gates, and staff gages.

## 1.3 GENERAL REQUIREMENTS

The Contractor shall verify all measurements and shall take all field measurements necessary before fabrication. Welding to or on structural steel shall be in accordance with AWS D1.1. Items specified to be galvanized, when practicable and not indicated otherwise, shall be hot-dip galvanized after fabrication. Galvanizing shall be in accordance with ASTM A 123/A 123M, as applicable. Exposed fastenings shall be compatible materials, shall generally match in color and finish, and shall harmonize with the material to which fastenings are applied. Materials and parts necessary to complete each item, even though such work is not definitely shown or specified, shall be included. Poor matching of holes for fasteners shall be cause for rejection. Thickness of metal and details of assembly and supports shall provide strength and stiffness. Joints exposed

to the weather shall be formed to exclude water.

#### 1.4 WORKMANSHIP

Miscellaneous metalwork shall be well formed to shape and size, with sharp lines and angles and true curves. Drilling and punching shall produce clean true lines and surfaces. Welding shall be continuous along the entire area of contact except where tack welding is permitted. Exposed connections of work in place shall not be tack welded. Exposed welds shall be ground smooth. Exposed surfaces of work in place shall have a smooth finish, and unless otherwise approved, exposed riveting shall be flush. Where tight fits are required, joints shall be milled. Corner joints shall be coped or mitered, well formed, and in true alignment. Work shall be accurately set to established lines and elevations and securely fastened in place. Installation shall be in accordance with manufacturer's installation instructions and approved drawings, cuts, and details.

#### 1.5 ANCHORAGE

Anchorage shall be provided where necessary for fastening miscellaneous metal items securely in place. Anchorage not otherwise specified or indicated shall include slotted inserts made to engage with the anchors, expansion shields, and power-driven fasteners when approved for concrete; toggle bolts and through bolts for masonry; machine and carriage bolts for steel; and lag bolts and screws for wood.

#### 1.6 SHOP PAINTING

Surfaces of ferrous metal except galvanized surfaces, shall be cleaned and shop coated with the manufacturer's standard protective coating unless otherwise specified. Surfaces of items to be embedded in concrete shall not be painted. Items to be finish painted shall be prepared according to manufacturer's recommendations or as specified.

### PART 2 PRODUCTS

#### 2.1 MATERIALS

##### 2.1.1 General

Materials indicated on the drawings or required in the work and not covered elsewhere by detailed requirements shall conform to the requirements of this section. In all cases not specifically covered in these specifications, the Contractor shall furnish approved highest grade commercial materials or products which are suitable for the intended use of the item.

##### 2.1.2 Structural Shapes and Plates

Steel bars, shapes and plates shall conform to ASTM A 36/A 36M. Galvanized coatings where required, shall conform to ASTM A 123/A 123M.

##### 2.1.3 Wall Ladder Rungs (Galvanized)



Manhole steps shall conform to ASTM C 478 and ASTM C 497. Aluminum steps shall be solid made from material in conformance with ASTM B 221 (Alloy 6005-TS) and with ASTM B 221M. Reinforced plastic steps may only be used in manholes or other locations not exposed to sunlight and shall be polypropylene plastic coated 0.38 inch deformed steel rod per ASTM A 36/A 36M. All steps shall be epoxied in place during the installation process.

#### 2.1.4 Corrosion-Resisting Steel Bolts and Anchor Bolts

Corrosion-resisting steel bolts and anchor bolts shall conform to ASTM F 593, or the applicable requirements of ASTM A 320/A 320M, Grade B8.

#### 2.1.5 Bolts

Bolts shall conform to ASME B18.2.1, or the applicable requirements of ASTM A 320/A 320M, Grade B8. The turned eye bolt shall have a 0.75 inch eye size, leg length of 4 inch and at least 0.12 inch thick.

#### 2.1.6 Nuts

Nuts shall conform to ASME B18.2.2. Nuts shall be galvanized. Stainless Steel nuts shall conform to ASTM F 594

#### 2.1.7 Concrete, Mortar and Grout

Cast-In-Place Structural Concrete, mortar and grout shall conform to the requirements of Section 03307 CONCRETE FOR MINOR STRUCTURES.

#### 2.1.8 Steel Pipes

Steel pipe shall conform to ASTM A 53/A 53M, Type E or S, Grade A, galvanized nominal size and weight unless noted otherwise.

##### 2.1.8.1 Pipe Access Gate and Appurtenances and Bollards

Pipe access gate and appurtenances and bollards shall be fabricated as shown on the drawings. Pipe access gate and appurtenances (including nuts and washers) and bollards shall be galvanized and painted as necessary in accordance with drawings.

#### 2.1.9 Pipe Caps

Pipe caps shall conform to ASME B16.3.

#### 2.1.10 Cover Plate

Cover plates shall conform to CID A-A-60005 or commercially available items meeting Contracting Officer approval. Sharp edges and burrs shall be removed from plates.

#### 2.1.11 Manhole Frames and Covers

Frames and covers are to be Gray Iron Castings, Type A-1497 as manufactured by Alhambra Foundry Co. Ltd. or approved equal. Castings for manhole

frames and covers shall conform to ASTM A 48/A 48M, Class 30. Frame and cover shall be machined to fit. Lids shall be imprinted with the words "Clark County Public Works Storm Drain".

#### 2.1.12 Steel Gratings

Steel gratings shall be fabricated of steel conforming to ASTM A 36/A 36M per dimensions shown on drawings. Galvanizing shall conform to paragraph ZINC COATING.

#### 2.1.13 Padlocks

Padlocks, if necessary, shall be provided by the Riverside County Flood Control and Water Conservation District.

### PART 3 EXECUTION

#### 3.1 GENERAL INSTALLATION REQUIREMENTS

All items shall be installed at the locations shown and according to the manufacturer's recommendations. Items listed below require additional procedures as specified. Items installed in roads under jurisdiction of the State of California Department of Transportation shall be in accordance with CALTRANS Highway Requirements.

##### 3.1.1 WORKMANSHIP

Miscellaneous metalwork shall be well formed to shape and size, with sharp lines and angles and true curves. Drilling and punching shall produce clean true lines and surfaces. Welding shall be continuous along the entire area of contact except where tack welding is permitted. Steel with welds will not be accepted, except where welding is definitely specified or called for on the drawings. All bolts, nuts, and screws shall be tight. Work shall be accurately set to established lines and elevations and securely fastened in place. Anchorage shall be provided where necessary for fastening miscellaneous metal and wood items securely in place. Anchorage not otherwise specified or indicated shall include slotted inserts made to engage with the anchors, expansion shields, and power-driven fasteners when approved for concrete; machine and carriage bolts for steel; and lag bolts and screws for wood.

#### 3.2 FINISHING

In general, tolerances for machine-finished surfaces designated by nondeciaml dimensions shall be within 0.016 inch. Sufficient machining stock shall be allowed on placing pads to insure true surfaces of solid material. Finished contacts of bearing surfaces shall be true and exact to secure full contact. All drilled holes for bolts shall be accurately located and drilled from templates.

#### 3.3 ZINC COATING (GALVANIZING)

Zinc coatings shall be applied in a manner and of a thickness and quality conforming to ASTM A 123/A 123M. All exposed ferrous metalwork, except

cast-iron and corrosion resistant steel and items to be completely embedded in concrete, shall be galvanized unless other protective coatings are specified. Metalwork shall be galvanized after fabrication. In the event that any portion of galvanized metalwork is abraded or otherwise damaged to the extent that the base metal is exposed, such damaged or abraded portions shall be neatly covered with Grade 50B solder conforming to the requirements of ASTM B 32.

### 3.4 WELDING

Welding shall conform to the provisions of AWS D1.1. Welders who have not been certified within two years of the date of commencement of work under this contract will not be allowed to perform the work.

### 3.5 BOLTED CONNECTIONS

Bolt holes shall be reamed normal to the member and shall be truly cylindrical throughout. Unless otherwise specified, holes for bolts shall not be more than 0.063 inch larger than the diameter of the bolt. Cutting bolt holes with a torch will not be permitted without the prior written approval of the Contracting Officer. Materials and parts necessary to complete each item, even though such work is not definitely shown or specified, shall be included. Poor matching of holes for fasteners shall be cause for rejection. Fastenings shall be concealed where practicable.

### 3.6 EXCAVATION

Excavation for concrete-embedded items shall be of the dimensions indicated on the drawings. Holes shall be cleared of loose materials prior to placement of concrete.

### 3.7 PIPE ACCESS GATE INSTALLATION

The pipe access gate and bollards will be imbedded in concrete as shown on the drawings.

Pipe access gate shall be installed at the location shown on the drawing. Hinged gate shall be mounted to swing as indicated. Latches, stops, and keepers shall be installed as required. Padlocks shall be attached to gate or gate posts with chains. Hinge pins, and hardware shall be welded or otherwise secured to prevent removal.

Bollards shall be installed at the locations shown on the drawings and painted as indicated on the drawings.

-- End of Section --

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